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SULFADIAZINE RESISTANT STRAINS OF BETA HEMOLYTIC STREPTOCOCCI

APPEARANCE DURING THE COURSE OF SULFADIAZINE PROPHYLAXIS AT A LARGE NAVAL TRAINING CENTER

EPIDEMIOLOGY UNIT NUMBER 22

A previous paper has described the pronounced reduction of streptococcic disease which occurred at a large naval training center in the Northwest as the result of sulfadiazine prophylaxis.[1] The present report deals with the loss of effectiveness of this prophylaxis as the result of the appearance of sulfadiazine resistant strains.

On March 1, 1944 all personnel at the center were placed on sulfadiazine prophylaxis and no control studies were carried out. Shortly thereafter, during this month of March, there was a decided increase in streptococcic disease in Camp Hill, one of the recruit camps, which at the beginning of March had been on sulfadiazine prophylaxis for a period of approximately three months. Streptococcic infections were approximately four times as frequent as they were in January, when the drug had been most effective (table 1). Furthermore, during January only 22 per cent of admitted patients with respiratory illness had throat cultures positive for beta hemolytic streptococci, whereas in March 47 per cent of such patients had positive cultures. A similar rise occurred in April in all camps at the center, which was confirmed clinically and bacteriologically.

This outbreak was investigated in Camp Hill and in other areas during April. It was found that:

1. The increase was not due to failure of the recruits to take the drug or absorb it.
2. The increase had no relation to the length of time the camp had been on sulfadiazine.
3. At the same time the year before there had been a definite increase in streptococcic infections at the center.
4. A rising rate of streptococcic infection was reported by the Public Health Service in the country as a whole during this same period.
5. Crude tests on in vitro sulfadiazine resistance made in our laboratory without eliminating the sulfonamide inhibitors present in most mediums showed no evidence of sulfadiazine resistance.

For these reasons, and because no controlled study was being carried out, it was felt at that time that this rise was probably seasonal and not due to the development of sulfadiazine resistant strains.

However, in May the results of the typing of the streptococci obtained from the patients in Camp Hill were reported from the National Naval Medical Center's Streptococcus Typing Center. A remarkable change had occurred in the distribution of group A beta hemolytic streptococci. Type 19 had, in the early part of the program, been responsible for approximately 28 per cent of the total group A streptococcic infections in Camp Hill. During April and May it was responsible for 95 per cent of such infections. This relative increase of the frequency of type 19 infections was later found to be general over the center (chart 1).

This predominance of one type and the disappearance of other types in the face of a rising rate of streptococcic disease in recruits who had been taking sulfadiazine prophylactically suggested that this organism had become relatively sulfadiazine resistant, and thus our earlier premise that the increase was seasonal was fallacious.

With the initiation of sulfadiazine prophylaxis, the possibility of the appearance of strains of beta hemolytic streptococci resistant to this drug was recognized. Lieut. Comdr. Armine Wilson had, for some time, been working on an in vitro test for resistance of streptococci. This test required the elimination of sulfonamide inhibitors present in all common mediums. Although modified to some extent later, it was perfected to the point where it could be applied by the early part of June. The technic of the test has been described elsewhere by Wilson.[2] It was based on the ability of streptococci to grow in a semisynthetic medium, relatively free of sulfonamide inhibitors, to which sodium sulfadiazine had been added to give a final concentration of 0, 1, 5, 25 and 125 mg. per hundred cubic centimeters of the drug. The resistance to sulfadiazine is measured by the ability of these concentrations to inhibit growth and was read accordingly. Thus, if a strain of streptococcus grew in tubes containing 0.1 and 5 mg. of sulfadiazine but did not grow in concentrations of 25 and 125 mg., the

Capt. William P. Mull, senior medical officer of the center, cooperated and helped.

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1. The Prevention of Respiratory Tract Bacterial Infections by Sulfadiazine Prophylaxis in the United States Navy, Epidemiology Unit No. 22, NAVMED 284, Bureau of Medicine and Surgery, Navy Department, Washington, D. C., pp. 7-34.

2. Wilson, Armine T.: Method for Testing In Vitro Resistance of Group A Hemolytic Streptococci to Sulfonamides, Proc. Soc. Exper. Biol. & Med. **58**: 130-133, 1945.

organism was said to have a resistance of 5 mg. of sulfadiazine.

A high percentage of cultures of types 19 and 17 streptococci obtained from this center in June were found to be resistant to concentrations of 25 and 125 mg. of sulfadiazine, but types other than these two, with an occasional exception of type 3, did not have this ability and were not sulfonamide resistant. This fact gave direct laboratory evidence that sulfonamide resistance had appeared in two types of streptococci, 17 and 19, and supported the hypothesis that the predominance of the latter type and the occurrence of streptococcic disease in recruits taking sulfadiazine was due to the appearance of a sulfadiazine resistant strain of streptococcus. By June, the time at which the resistance tests were first done, type 17 was more common than it had been earlier, and later this type became more and more frequent (chart 1). Unfortunately, practically no strains isolated prior to June had been preserved. It seemed probable, nevertheless, that resistant strains of type 19 first became predominant during March and April and that similar resistant strains of type 17 become common subsequently.

TABLE 1.—*Comparison of Streptococcic Infections Expressed as Annual Rate per Thousand in Camp Hill in January and March 1944*

	January	March
Tonsillitis and pharyngitis	33	112
Scarlet fever	23	93
Rheumatic fever	3	15
Admission with positive culture *	130	494

* This figure represents the admission rate of patients with any type of respiratory illness who had positive throat cultures for beta hemolytic streptococci.

That this was the first known appearance of strongly sulfadiazine resistant strains of beta hemolytic streptococci, at least in any numbers, was supported by the following additional facts:

1. This was the first time at this center or in any other naval activity where sulfadiazine prophylaxis had proved ineffective in controlling streptococcic infection.

TABLE 2.—*Comparison of the Sulfadiazine Resistance of Beta Hemolytic Streptococci at a Naval Activity in the Northwest with Three Stations in the East, Middle West and South, Summer of 1944*

	Resistance in Milligrams per 1,000 Cc.	Three Stations in East, Middle West and South: Number Tested	Three Stations in East, Middle West and South: %	Station in Northwest: Number Tested	Station in Northwest: %
Type 17	0	43	94	12	9
	1	1	2	4	3
	5	2	4	17	12
	25	0	0	74	52
	125	0	0	34	24
Total		46	100	141	100
Type 19	0	60	87	11	5
	1	4	6	24	12
	5	5	7	41	20
	25	0	0	115	55
	125	0	0	17	8
Total		69	100	208	100

2. One strain of type 17 and one of type 19 preserved from December 1943 at this same activity were not strongly sulfadiazine resistant. The type 17 showed a resistance to 5 mg. of sulfadiazine and the type 19 no resistance.

3. Of six strains of type 19 and five of type 17 streptococci preserved from Mrs. Lancefield's collection from the presulfonamide era, none were resistant.

4. Strains obtained during the summer of 1944 from other naval activities in the East, Middle West and Southwest, who received few men from this center but where sulfonamide prophylaxis had been carried out during the previous season, revealed no strongly resistant strains of streptococci (table 2).

In June and July the general sulfadiazine prophylactic program was discontinued. Four recruit camps, however, were continued on 0.5 Gm. doses of sulfadiazine given for a part of the training period. Although these studies were inconclusive as the result of lax administration of the tablets, there seemed to be some evidence that even at this time 0.5 Gm. doses of sulfadiazine had some, but slight, value in preventing streptococcic infection.

The streptococcic disease rate remained high through July, and, since so little was known of the role of sulfonamide resistant strains of beta hemolytic streptococci and their relationship to sulfadiazine prophylaxis in various doses, it was decided to continue studies despite the known presence of sulfonamide fast strains. Two camps, Waldron and Peterson, which for the period April through July had the highest overall streptococcic disease rates (table 3) were selected for continued prophylaxis, whereas the remaining three camps were to get no prophylaxis.

TABLE 3.—*Comparison of Streptococcic Disease Rates in Five Recruit Camps from April to July Inclusive, Expressed as Annual Rate per Thousand*

		Tonsillitis-Pharyngitis	Scarlet Fever	Combined
Waldron	(A)	182	86	268
Ward	(B)	82	98	180
Bennion	(C)	98	74	172
Hill	(D)	136	90	226
Peterson	(E)	197	101	298

Accordingly, in these two camps the even numbered companies were given 1.0 Gm. and the odd numbered companies 0.5 Gm. of sulfadiazine daily, starting August 7. An addition in personnel to the Epidemiology Unit made it possible to supervise the administration of the tablets, and within a short time compliance was practically perfect.

Approximately coincident with the administration of sulfadiazine in these two camps there was a rise in practically all types of respiratory illness throughout the center. In some areas the upward trend was apparent before the sulfadiazine was started, but in all areas, whether sulfadiazine was administered or not, there was an obvious increase in streptococcic infection, both absolute and relative in either August or September, which continued into October (charts 2, 3 and 4).

During August the two camps on sulfadiazine had the highest absolute attack rates for scarlet fever and tonsillitis-pharyngitis of any recruit areas. Furthermore, the admission rate of patients with positive throat cultures for hemolytic streptococci was also highest in these two camps. This high rate was maintained through September and most of October (left half of charts 2, 3 and 4). The relative increase in these diseases over that of July in the camps getting sulfadiazine compared with those not getting it was, however, neither as well defined nor as consistent as the absolute increase (right half of charts 2, 3 and 4). The most striking difference between the treated and untreated camps was the much higher rate of scarlet fever in the treated groups.

This was a complete reversal of the experience early in the program prior to the appearance of sulfadiazine resistant strains. Furthermore, there seemed to be no significant difference between the 0.5 and the 1.0 Gm. doses of prophylactic sulfadiazine in preventing streptococcic disease, neither dose having prophylactic value. In addition there was some suggestion from the high rates for scarlet fever in Camps Waldron and Peterson, compared with the lower rates in the untreated camps, that this dose might enhance the ability of the streptococcus to attack individuals getting the sulfadiazine.

In the presence of this outbreak it seemed imperative to answer two questions:

1. If the blood level of sulfadiazine is increased by giving 1.5 Gm. of sulfadiazine daily, will sulfadiazine still fail as a prophylactic measure?

2. If it does fail is there any evidence that the sulfadiazine at this dosage level increases the likelihood of acquiring streptococcic disease?

The camps used in attempting to answer these questions were Waldron, Peterson and Ward. The recruits in the first two of these camps had been receiving

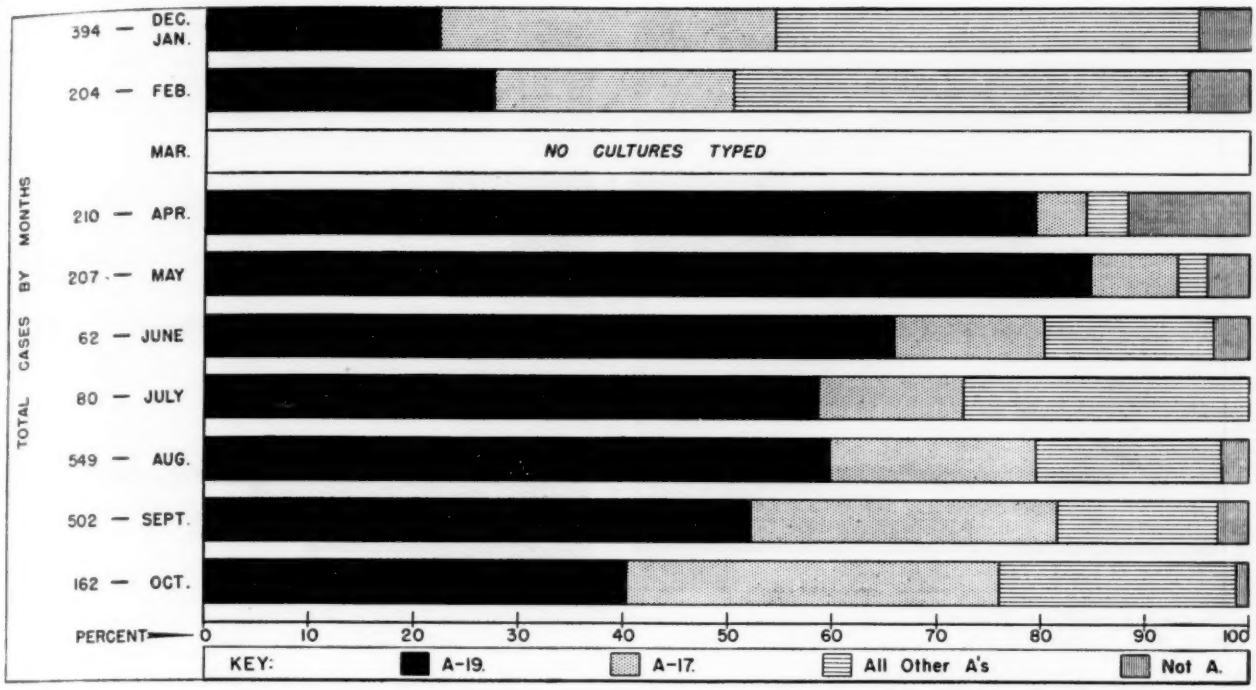

Chart 1.—Distribution of types of hemolytic streptococci, 1944.

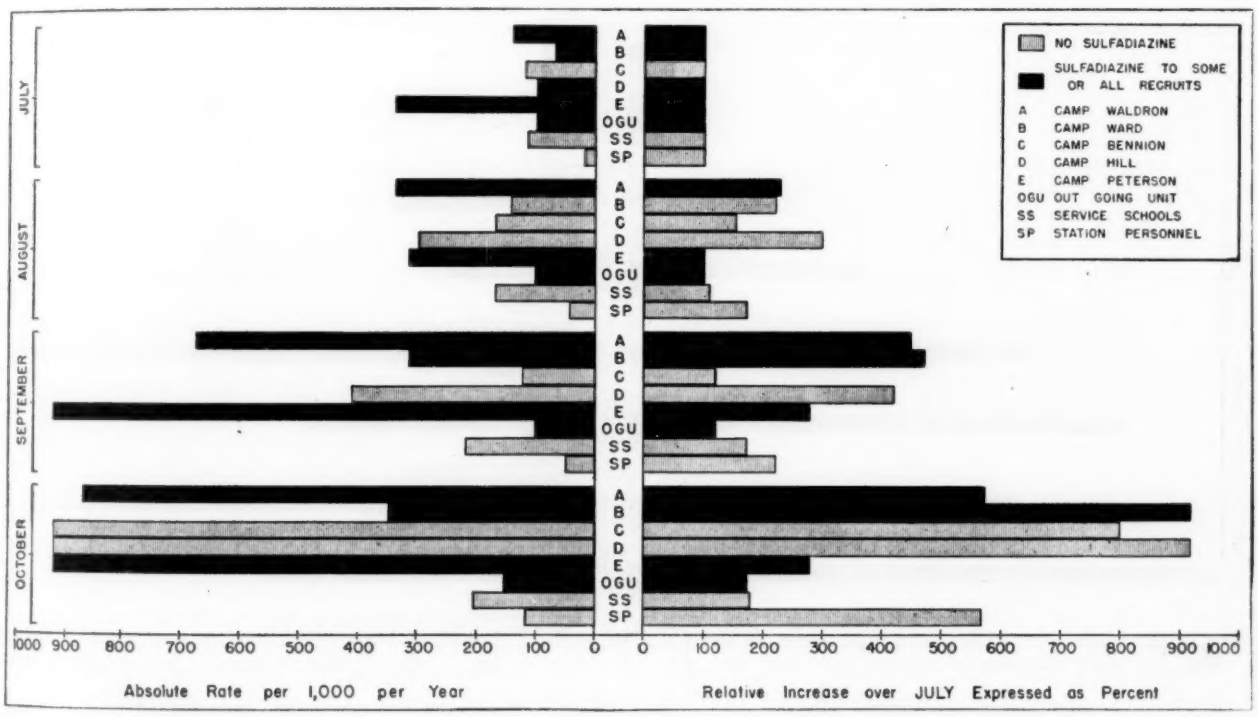

Chart 2.—Tonsillitis and pharyngitis, 1944.

sulfadiazine prophylaxis during August, as already mentioned, while in the third camp no sulfadiazine had been given for over a month. Waldron and Peterson had the highest streptococcus disease rates during August and Camp Ward the lowest rate. In each camp due to camp age, location of barracks and similar variables. The administration was supervised carefully, and the men received the drug as ordered from September 13 until October 8, except in Camp Peterson, where the drug was discontinued on October 4. Three companies

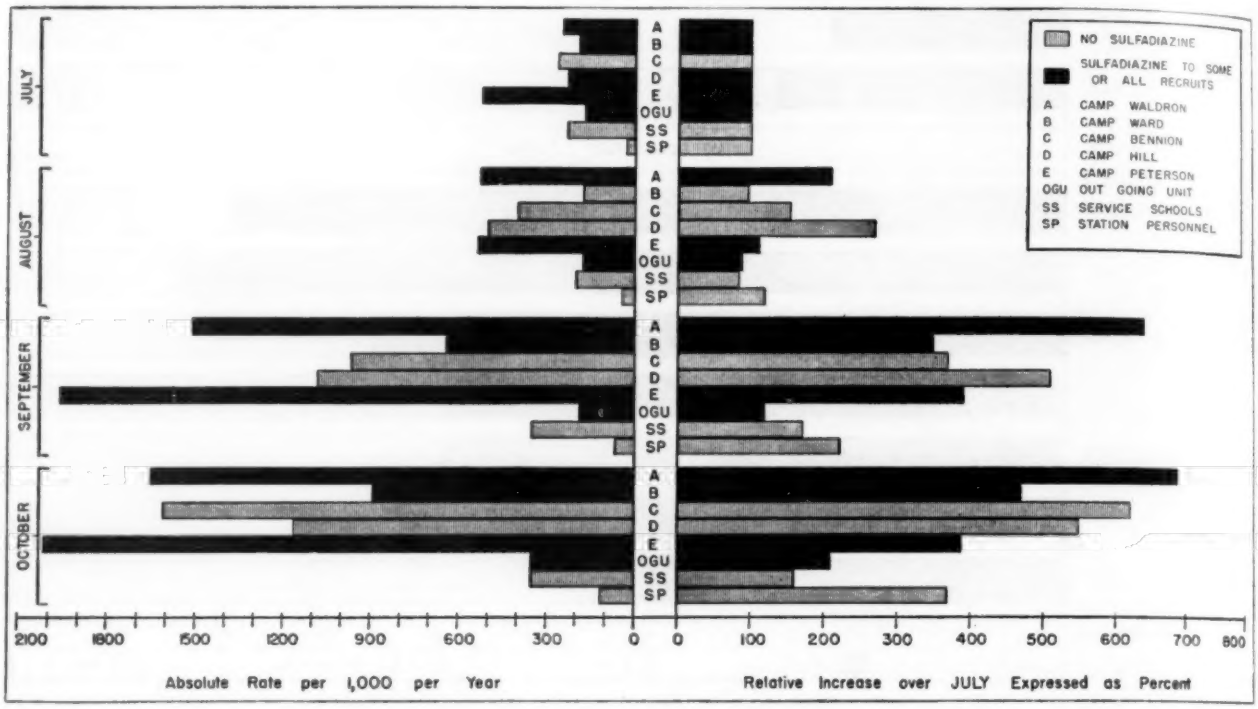

Chart 3.—Scarlet fever, 1944.

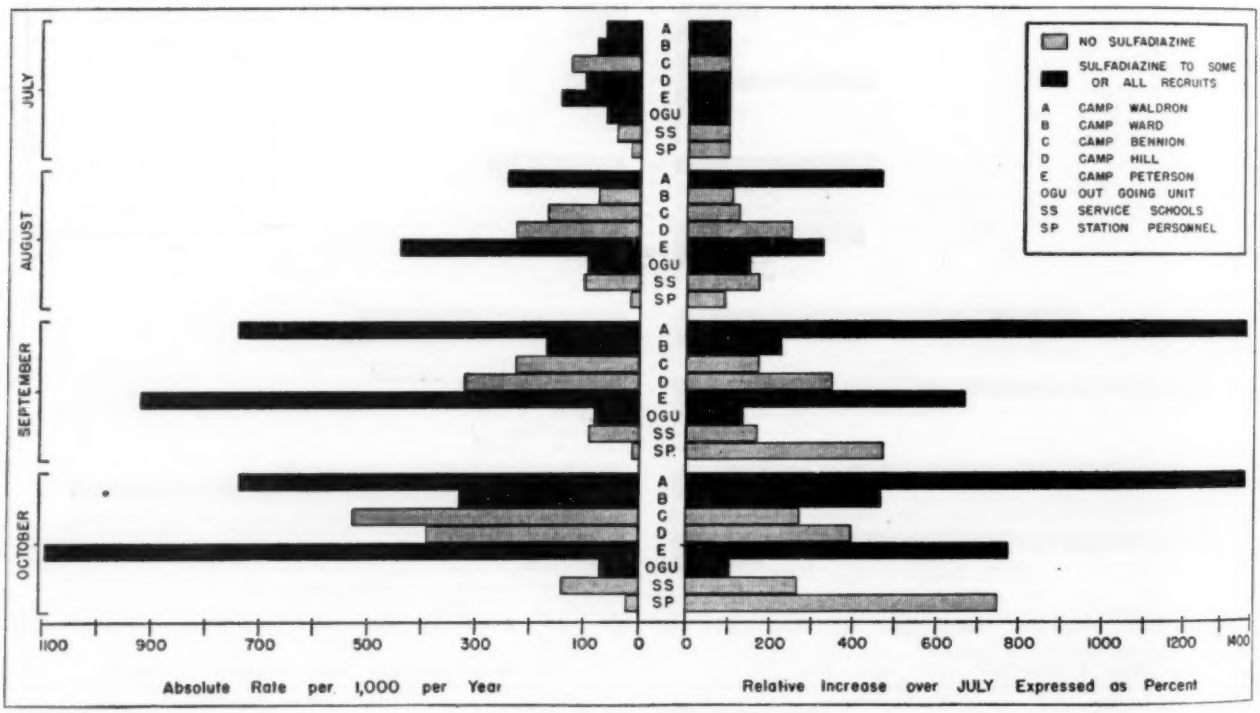

Chart 4.—Positive streptococci, 1944.

the recruits in the odd numbered companies received no sulfadiazine, whereas those in the even numbered companies received 1.5 Gm. of the drug daily. Since odd and even numbered companies were admitted alternately into each recruit area, this was felt to give the best possible experimental pattern, eliminating bias in Camp Waldron developed cases of diphtheria and streptococcic disease concomitantly during this period and were excluded from the study.

Despite the larger dose of sulfonamide, the outbreak continued in the treated individuals as well as in the controls. Clinical analysis of the blood of recruits receiv-

ing 1.5 Gm. of sulfadiazine indicated that in the majority of these men levels of at least 2 mg. per hundred cubic centimeters were reached daily. Furthermore, the three companies that had both diphtheria and streptococcic disease were given 2 Gm. of sulfadiazine daily from September 8 to October 4 inclusive, but despite this increased dose their rate for streptococcic infection was exceedingly high. It therefore became apparent that increasing the dose of sulfadiazine was not effective and that daily doses of 0.5, 1, 1.5 and 2 Gm. all seemed equally useless in controlling streptococcic disease.

The second question, whether, in the presence of sulfadiazine resistant strains, sulfadiazine prophylaxis enhanced the possibility of acquiring streptococcic disease could not be definitely answered. However, the evidence in favor of the stimulating effect of sulfadiazine on streptococcic illness in the presence of these sulfonamide resistant strains was as follows:

1. Concurrent with the institution of consistent administration of sulfadiazine in August, an outbreak of streptococcic infection occurred with a high proportion of cases of scarlet fever.

2. The attack rate for all types of streptococcic infection and particularly scarlet fever was greater in the treated than in the untreated camps at this time.

3. When one half of a camp (even numbered companies) were given 1.5 Gm. of sulfadiazine and the other half (odd numbered companies) received none, more streptococcic disease usually occurred in the companies receiving the sulfadiazine (table 4).

It was shown that these higher rates in the treated companies as a whole were not due to previous differences in illness rates or to a few treated companies with very high rates.

On the other hand, there were a considerable number of facts which prevented any definite conclusions on this enhancing or stimulating effect:

The fact that a streptococcus outbreak occurred when sulfadiazine prophylaxis was being given had little value in proving that the one was influenced by the other, for the following reasons:

(*a*) In retrospect there was some evidence that the streptococcus rate was beginning to rise in late July and the first week of August before the intensive sulfadiazine program was reinstituted. In the previous summer a similar but smaller rise began at this time of year.

(*b*) During the summer the training period of recruits had been increased from six to twelve weeks, thus allowing more time for an outbreak in any given company to gain momentum.

(*c*) During June and July the mean age of recruits had decreased, thus increasing the number of younger and more susceptible recruits.

(*d*) One of the two dispensaries in each camp had been closed, resulting in greater opportunity for more cross infection at sick call and in the wards.

(*e*) The rise in streptococcic disease rates was general throughout the camp, whether sulfadiazine prophylaxis was administered or not.

The fact that the rates were higher, particularly for scarlet fever, in the treated camps than in the untreated camps was not too significant, since:

(*a*) The two camps selected had had the highest streptococcic disease rates for a period of five months of any of the recruit camps and it would be expected that this circumstance, whatever its cause, would continue under epidemic conditions.

(*b*) Camps, being relatively isolated from one another, in the face of an outbreak act as individuals, and a conclusion based on 2 treated individuals and 3 controls carries little weight.

It was hoped that, by dividing each camp into two equal and apparently comparable groups and giving one sulfadiazine and the other no sulfadiazine, conclusive evidence could be obtained indicating whether the prophylaxis had an enhancing effect on streptococcic disease.

The evidence seemed compatible with this hypothesis but was neither consistent enough nor carried over a long enough period of time to be conclusive. Although the rates for tonsillitis-pharyngitis, scarlet fever and total admissions of patients with positive throat cultures for hemolytic streptococci was greater in the treated groups than in the untreated groups when the figures for the three camps were combined, there was a lack of consistency in the results when the figures for the three camps were considered individually. Although in each camp the scarlet fever rate was higher in the treated group than in the untreated group, in Camp Peterson the tonsillitis-pharyngitis and total patients admitted with positive cultures for beta hemolytic streptococci was higher, although not significantly, in the untreated companies than in the treated companies (table 4).

TABLE 4.—*Comparison of Streptococcic Illness Rates in Recruits Getting 1.5 Gm. of Sulfadiazine Daily with Those Receiving No Sulfadiazine for Three Week Period During Fall of 1944*

		Tonsillitis-Pharyngitis		Scarlet Fever		Total Admitted with Positive Cultures	
Camp		1.5 Gm. Sulfadiazine	No Sulfadiazine	1.5 Gm. Sulfadiazine	No Sulfadiazine	1.5 Gm. Sulfadiazine	No Sulfadiazine
Waldron	Cases	79	46	80	69	171	119
	Rate*	893	497	905	745	1,945	1,290
Ward	Cases	58	39	40	21	111	75
	Rate*	565	336	390	181	1,085	649
Peterson	Cases	57	53	96	56	159	151
	Rate*	751	813	1,266	860	2,100	2,310
Total	Cases	194	138	216	146	441	345
	Rate*	727	504	809	533	1,655	1,265

* Annual rate per thousand.
Not underlined, not significant; single underlined, significant at 5 per cent level; double underlined, significant at 1 per cent level.

TABLE 5.—*Distribution of Types of Beta Hemolytic Streptococci in Areas Where Sulfonamide Prophylaxis Was Being Used or Had Been Recently Used Compared with Areas Where No Sulfonamide Had Been Used Recently*

	Received Sulfadiazine		Received No Sulfadiazine	
	Number Typed	% of Total	Number Typed	% of Total
A19	233	57.1	76	40.2
A17	142	34.8	34	18.0
A3	14	3.4	26	13.8
A1	1	0.2	14	7.4
A? *	9	2.2	10	5.3
Other A's	2	0.5	24	12.7
Not A	7	1.7	5	2.6
Total	408	99.9	189	100.0

* Group A could not be typed.

In the presence of both nonresistant and sulfonamide resistant strains, it would be expected that sulfadiazine prophylaxis would tend to inhibit the nonresistant strains and not have the same effect on the resistant strains. The resulting effect would be that, as in Camp Hill in April, the resistant strains would become predominant and the nonresistant strains would disappear. This was confirmed by the fact that not only were the types which developed pronounced resistance (types 17 and 19) more common in areas where sulfonamide was used (table 5) but that the proportion of resistant strains of types 17 and 19 were also more common in these areas (table 6) than in the untreated areas.

It would also be expected that resistance would be most likely to appear in the more widespread and

TABLE 6.—*Comparison of Resistance to Sulfadiazine of Types 17 and 19 Hemolytic Streptococci in Areas Where Prophylaxis Was Used and Where It Had Not Been Used Recently*

Resistance in Mg. per 100 Cc.	Sulfadiazine Used		No Sulfadiazine Used	
	Number Tested	%	Number Tested	%
0	0	0	12	20.7
1	3	3.2	4	6.9
5	10	10.6	13	22.4
25	78	83.0	28	48.2
125	3	3.2	1	1.7
Total	94	100.0	58	99.9

TABLE 7.—*Distribution of Sulfadiazine Resistant Strains of Streptococci in Three Naval Activities on the West Coast During Summer of 1944*

Resistance in Mg. per 100 Cc.	Type 17		Type 19	
	Number Tested	%	Number Tested	%
0	1	11	2	7
1	0	0	5	18
5	0	0	9	32
25	6	67	9	32
125	2	22	3	11
Total	9	100	28	100

therefore presumably more communicable types. This seemed true since types 17 and 19 had been, at the beginning of the sulfadiazine program, most frequently found, whereas type 3, which had shown some evidence of resistance, had been next most common. Additional evidence that these types which showed sulfadiazine resistance were also quite communicable was found in the fact that during the summer of 1944 several other naval activities on the West Coast that received trainees from our center regularly had evidence of infection with these same sulfadiazine resistant strains (table 7). Other camps that received few trainees from our center had little evidence of infection with these resistant strains (table 2).

In addition, these three types in which resistance appeared were characterized by their ability to form erythrogenic toxin. This ability was, however, apparently independent of whether they were resistant or not, as evidenced by the fact that types 17, 19 and 3 before resistance could be demonstrated had shown more tendency to cause scarlet fever than any other type present at the center. Thus, in January and February of 1944, 45 per cent of the most common respiratory infections (catarrhal fever, tonsillitis-pharyngitis and scarlet fever) caused by type 3, 46 per cent caused by type 17 and 26 per cent caused by type 19 were scarlet fever. Furthermore, with the appearance of resistance to sulfadiazine, this ability to cause scarlet fever decreased slightly in type 17 but increased in type 19. Thus, in August and September, when most type 17 and type 19 organisms were resistant, 34 per cent of the common respiratory infections caused by type 17 and 42 per cent of those due to type 19 were scarlet fever.

It was therefore clear that the strains of types 17 and 19 which caused trouble in August and September had three apparently independent attributes in common—they were sulfadiazine resistant not only to prophylactic but, according to the medical officers at the hospital, to therapeutic dosage as well, they were highly communicable and they formed erythrogenic toxin. They also had the additional attributes of being able to invade tissue giving rise to suppurative lesions, and the ability to cause rheumatic fever. Whether these last two characteristics were greater in the sulfonamide resistant strains than they were in the nonresistant strains is not known.

COMMENT

From the experience in the initial months of the sulfadiazine prophylaxis program there seemed no doubt that this measure was effective in controlling streptococcic disease in the presence of sulfadiazine sensitive strains. Later it became equally clear that, in the presence of sulfadiazine resistant strains, prophylaxis with sulfadiazine was of no value and was possibly injurious.

This center was the first place, to our knowledge, where clinically important sulfadiazine resistant strains of beta hemolytic streptococci appeared. It had, at the onset of the sulfadiazine program, an exceedingly high rate of streptococcic disease—much higher than any other comparable training center. With the original high infection rate, the continuous influx of new strains and the thousands of generations of streptococci in a changing population, the potentialities of having a rare resistant strain brought in, or a mutation in the direction of resistance occur in the strains already present, were great.

Under conditions of mass sulfadiazine prophylaxis or treatment, Darwin's phenomenon of "survival of the fittest" would tend to eliminate the less resistant strains. The result would be, as we found originally in Camp Hill and later in the center as a whole, that the resistant strains would become predominant, provided they also had the potentiality of high communicability. In this military camp, where new susceptibles were introduced continuously and were given prophylaxis, the biologic result was therefore the relative increase in the number of strains that were both sulfonamide resistant and highly communicable. These strains formed, incidentally, potent erythrogenic toxin, thus giving rise to a higher proportion of cases of scarlet fever to total streptococcic disease than earlier in the year (36 per cent in September 1944, compared with 22 per cent in January 1944).

Whether in the presence of sulfadiazine resistant strains prophylaxis tends to increase streptococcic infec-

tions is, on the basis of our experience, impossible to answer. We have shown that the two highly resistant strains of types 17 and 19, as well as the less resistant type 3, had, even before the appearance of resistance, been more likely to cause scarlet fever than the other types of streptococci which were present at the center. Since the sulfadiazine prophylaxis inhibited the nonresistant types, which at this center were less likely to cause scarlet fever, an outbreak occurring in a regimental area or camp where prophylaxis is given would be characterized by a higher proportion of cases of scarlet fever than in an area where an equal amount of streptococcic infection occurred as the result of a combination of resistant and nonresistant strains. This might explain the apparently higher rate of scarlet fever in treated groups. It does not, however, account for the apparently higher attack rate for total streptococcic disease in a group getting sulfadiazine than in a control group not getting the drug, a condition which occurred in two of the three camps included in the study in late September and early October. If these differences were real and not the result of some chance or systematic error of unknown nature, these phenomena might be explained in a number of ways. Among these theories one could suggest:

1. That the sulfadiazine resistant strains had so altered their enzyme systems that sulfadiazine in small concentrations in the host acted as an added growth factor or a catalytic agent.

2. That sulfadiazine inhibits certain organisms in the throat which normally compete with the streptococcus for food requirements or produce substances which have an antibiotic effect on the beta hemolytic streptococcus.

But, leaving theories to explain unproved observations aside, the fact remains that the appearance of sulfadiazine resistant strains of beta hemolytic streptococci completely sabotaged an effective means of control of respiratory infections at this center.

SUMMARY

After approximately three months of successful sulfadiazine prophylaxis of respiratory infections at a large naval training center, the effectiveness of this measure became progressively less and eventually a major epidemic of streptococcic disease occurred.

An increase in dosage as high as 2 Gm. daily did not prevent streptococcic diseases, and it was the impression of medical officers at the center that the drug had lost its value therapeutically in these infections.

The loss of prophylactic value of sulfadiazine was originally associated with an absolute and relative increase in the frequency of group A, type 19 infections to the practical exclusion of all other types. Later, group A, type 17 became relatively frequent. These two types were shown by laboratory methods to be sulfonamide resistant in vitro.

Other types of streptococci with a few exceptions of type 3 were not sulfonamide resistant.

The proportion of sulfadiazine resistant strains was greater in those recruit camps getting sulfadiazine prophylaxis than in those not getting sulfadiazine.

There was some suggestive evidence but no definite proof that, in the presence of sulfadiazine resistant strains, sulfadiazine prophylaxis tended to increase streptococcic infection, particularly scarlet fever.

THE DEVELOPMENT AND USE OF ALPHA-NAPHTHYL THIOUREA (ANTU) AS A RAT POISON

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During the past three years an investigation has been carried on in this laboratory with the purpose of finding and developing a new rat poison. The best poison so found, alpha-naphthyl thiourea (ANTU), has been proved through extensive laboratory tests and also by controlled field trials in a large city to be an effective and specific poison for the Norway rat, a very common and destructive rat throughout the world.

Since secrecy restrictions on this work have now been lifted and the Office of Scientific Research and Development has given permission for the manufacture and release of alpha-naphthyl thiourea to the public, it seems advisable to present an account of the development of this poison together with effective ways of using it, its toxicity to animals other than rats and procedures to be followed in case of accidental poisoning. The experience gained by large scale field use of alpha-naphthyl thiourea is summarized as a guide to those who have occasion to conduct organized eradication campaigns in the future.

It may be mentioned at this time that, quite apart from rodenticidal uses, alpha-naphthyl thiourea and other thiourea derivatives have proved to be interesting and useful new agents in fields as varied as medicine, biochemistry, physiology and genetics.

Interest in thiourea derivatives as rat poisons arose indirectly from studies on the self selection of diets, which showed rats to be capable of choosing nutritive substances and avoiding harmful ones.[1] This ability to make beneficial dietary selections was found to be lost when taste nerves were sectioned;[2] accordingly it was concluded that some connection exists between the taste of substances and their nutritional or toxic values.

To test this theory the toxicity of various bitter substances was determined. One very bitter substance which had been considered nontoxic was phenyl thiourea (also known as phenyl thiocarbamide). Since the observation of Fox in 1931 that, while this compound tasted very bitter to most people there were some who could not taste it at all,[3] phenyl thiourea had been widely used for research in the fields of genetics and sensory perception. (The inability to taste phenyl thiourea was found[4] to be inherited as a mendelian recessive.)

Following the usual method of testing taste ability in human beings with phenyl thiourea, we placed a few crystals on the tongues of 6 rats. To our surprise all 6 were found dead the next morning. This observation was followed up by a quantitative determination of the

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The work described in this paper was done under a contract, recommended by the Committee on Medical Research, between the Office of Scientific Research and Development and the Johns Hopkins University.

This work was done with the collaboration of Miss Nancy Cadwalader, Mrs. K. C. Clisby, Dr. S. H. Dieke, Dr. J. T. Emlen Jr., Dr. James Flexner, Dr. J. B. Frerichs, Dr. W. J. Griffiths Jr. and Mrs. Martha Schaffer.

1. Richter, C. P.: Harvey Lectures, series 38, 1942-1943, p. 63.
2. Richter, C. P.: Tr. Am. Neurol. A., 65th annual meeting, June 1939, p. 49.
3. Fox, A. L.: Proc. Nat. Acad. Sc. **18**: 115 (Jan.) 1932.
4. Blakeslee, A. F., and Fox, A. L.: J. Hered. **23**: 97 (March) 1932. Snyder, L. H.: Ohio J. Sc. **32**: 436, 1932.

toxicity to our stock rats. The median lethal dose was found to be 3 or 4 mg. per kilogram of body weight; in other words phenyl thiourea was quite as toxic to rats as strychnine!

In the course of our work on the toxic effects of phenyl thiourea,[5] it was found that our laboratory rats regularly ate enough poisoned food to kill themselves when offered with concentrations of phenyl thiourea as low as 1 per cent. It thus appeared that this highly poisonous substance might be accepted well enough to make it useful as a rat poison.

Shortly before the entry of this country into the war it was realized that we were in a very vulnerable position with respect to the control of rats and rat borne epidemics. Red squill, the staple rat poison, was no longer available in adequate amounts because the Axis powers held the sources of supply along the Mediterranean seaboard. Other possible poisons were eliminated by critical requirements or potential hazards in use.

The wide and prolonged use of phenyl thiourea for taste and inheritance tests without any accidents indicated that it probably does not have any toxic action on man. This probability, coupled with its high toxicity to rats, made it seem an excellent candidate as a substitute for red squill. Through the interest of Colonel Perrin Long, at that time chairman of the Committee on Chemotherapeutic and Other Agents of the Division of Medical Sciences of the National Research Council, a grant was given to this laboratory to test phenyl thiourea as a rat poison and also to determine which baits would serve most effectively in its use. The work was begun in January 1942.

FIELD TRIALS AND METHODS OF SYSTEMATIC RAT CONTROL

Preliminary tests with phenyl thiourea on several city dumps and large grocery stores in Baltimore were not satisfactory. Some rats were killed but many survived, as shown by consumption of plain baits offered subsequently. A number of wild rats were therefore trapped, brought into the laboratory and offered phenyl thiourea baits along with unpoisoned food. A definite discrimination against poisoned baits was immediately apparent, and it was concluded that the bitter taste was responsible for the poor results obtained in the field.

A search was accordingly started for a thiourea derivative which would have the same high toxicity as phenyl thiourea without its bitter taste. A request to the E. I. du Pont de Nemours Company for thioureas and related compounds which might possess the desired characteristics brought a prompt and helpful response. Over one hundred samples were sent within a short time. These were screened by administering 100 mg. doses to laboratory rats by stomach tube, followed by progressively lower doses whenever the compound killed the rats. In this way nine compounds were found which possessed toxic values comparable to phenyl thiourea. These were then offered to rats in 1 per cent mixtures with finely ground yellow corn. Of the nine, alpha-naphthyl thiourea (a fine gray insoluble powder with very little odor or taste) was most readily accepted. Further tests in which alpha-naphthyl thiourea poisoned baits were offered to groups of laboratory rats showed that complete kills were generally obtained, even when unpoisoned food was available at the same time. Laboratory tests were then made with captive wild Norway rats and equally satisfactory results obtained.

Following these encouraging observations, further trials in the field were instituted. Recognizing the inadequacy of individual houses and yards as test areas, it was decided to adopt the city block as a minimum unit for poison treatment. Subsequent observation showed the wisdom of this decision, since the four streets surrounding a block were found to form natural barriers which rats rarely crossed, except under special circumstances, while local movements from yard to yard within a block were common.

During the next three years a number of experimental campaigns were undertaken in different parts of the city of Baltimore, some on a small and others on a large scale. In general the smaller campaigns were directed toward solving problems of technic, such as optimum concentrations of alpha-naphthyl thiourea in bait and most suitable baiting procedures, while the larger ones were aimed more at elucidation of problems dealing with workers and assistance from various civic and social organizations. For the information of those who may want to undertake similar campaigns in other cities, a brief chronologic account is given here of the results obtained in each of these undertakings.

Eight blocks in the city of Baltimore were treated in the first trial. Baits composed of yellow corn meal with 1 per cent alpha-naphthyl thiourea and sections of fresh ears of corn with the grains split and lightly dusted with alpha-naphthyl thiourea were distributed to every house, cellar and yard by Boy Scouts. The results were promising. Large numbers of dead rats were recovered, and inhabitants reported very few survivors.

More extensive tests now seemed to be warranted with a view to working out a plan and method for a citywide campaign. Questions of personnel, poisoning technic, type of bait and precautions for protecting the public were therefore discussed with municipal authorities of Baltimore. An appropriation of $5,000 was provided by the city in October 1942 for the hiring of men; the Office of Scientific Research and Development continued to provide the bait and poison.

The Eastern Health District, a densely populated and heavily rat infested area, covering about two hundred blocks around the Johns Hopkins Hospital, was selected for the first large scale test. A crew of men was procured and a standardized bait of finely ground corn with 1 per cent alpha-naphthyl thiourea was decided on. The men worked in pairs distributing the bait in paper cups in the houses, cellars and yards of each block. Dead rats were picked up on the following days, and a house to house survey was made several weeks later to secure reports from the residents on the persistence of rats.

The results obtained were irregular. Some blocks reported very few survivors, others reported many. Up to 100 dead rats were recovered in certain blocks, while in others only a few were found. An investigation of the causes of failure at this time showed that many houses had been missed or hastily treated by unreliable crew members. At least some of the low kills could be attributed to this.

A series of more intensive and careful block campaigns was organized in another section in May 1943, using a group of fifteen young and enthusiastic air raid war-

5. Richter, C. P., and Clisby, Kathryn H.: Toxic Effects of the Bitter Tasting Phenylthiocarbamide, Arch. Path. **33**: 46 (Jan.) 1942.

dens as volunteer workers. Preparations included the distribution of typewritten notices and the initiation of a general clean-up campaign culminating in a special garbage collection immediately preceding the poisoning.

This time alpha-naphthyl thiourea was used in three types of bait: it was dusted over diced apples and sweet potatoes, offered in spoonful piles of a 1 per cent mixture with cornmeal, and put out in protected places (inaccessible to children and pets) as a suspension in water. Emphasis was placed on thoroughness, and it was believed that very few rat infested places were missed. Dead rats were collected two days later and all burrows firmly closed on the third and fourth days. More poison baits or traps were promptly set out wherever holes reopened or other fresh rat signs were seen.

Results in this campaign were good. Many dead rats were recovered even where they had not been suspected and very few holes were reopened. Residents and air raid wardens, acting as inspectors, found very few rat signs in this area for many months; a few blocks have remained clear of rats up to the time of this writing, two and one-half years later, as determined from reports and from surveys conducted by trained men.

The good kill obtained in all of these blocks and the outstanding success obtained in a few indicated that satisfactory results were attainable with alpha-naphthyl thiourea as a field rodenticide. The thoroughness of distribution, the use of several alternate baits and the preliminary clean-up were all considered to have contributed materially to the success of the campaign.

A more extensive experimental program was next set up under city appropriations of $55,000[6] which provided for a centrally located rodent control office with a director, office help, field workers, a health inspector and technical assistants for an eighteen month period. New blocks were treated following the pattern set in earlier tests but with several added features. Printed notice cards were prepared and large posters of two types were made to be placed in conspicuous parts of the blocks; one type, printed in red, announced the campaign for the block; a second, in black, which was substituted for the red poster after the campaign had been completed, reported that the job had been done and requested residents to communicate any recurrence of rats to their block inspector, whose name and address appeared at the bottom. Special attention was also given to the reappearance of rats in previously treated blocks. For this purpose a force of volunteer block inspectors was organized. Each inspector was asked to make a monthly door to door canvass of his or her block and submit a report on sites of persisting or reappearing trouble. A field crew was then dispatched to the scene to distribute poison, set traps or fumigate burrows with cyanogas dust.

In all about 1,360 city blocks were treated with alpha-naphthyl thiourea during this eighteen month period. The results in general were fairly good although still far from perfect: in most blocks the kill was about 90 per cent, based on estimates of total rat populations obtained in intensive trapping campaigns.

Budget limitations and the wartime scarcity of capable field workers demonstrated that any expansion of the program during 1945 would have to depend on volunteer participation. Experience had shown furthermore that there were many advantages to be gained by the continuous personal attentions which could be devoted to a block by its interested residents. A system of volunteer workers was accordingly organized and a new twelve month budget of $49,000 was appropriated by the city for office personnel, a limited field force and the purchase of grain bait; alpha-naphthyl thiourea was again furnished by the Office of Scientific Research and Development in return for reports on results.

At the present time, up to Aug. 1, 1945, over 1,500 citizens have volunteered to do the work of treating and repeatedly checking for rats in their home blocks and have been given detailed instructions and baiting materials by the City Rodent Control Office. They have, to date, treated and placed under their permanent supervision about 2,830 blocks comprising about three fourths of the heavily populated portion of the city. An effective procedure has been developed by which volunteer workers can be recruited, organized, instructed and put to work through circulars and petition forms distributed by the Rodent Control Office and through talks and field demonstrations by trained city employees.

At present, alpha-naphthyl thiourea is being effectively used in five different ways: (1) in a mixture (2 to 5 per cent) with finely ground grain such as corn or wheat, (2) as a spray or dust on ground grain or on fruit or vegetables such as diced apples, sweet potatoes or tomatoes, (3) as a dust in pure form or mixed half and half with flour, to be placed on floors and runways, (4) as a dust on the surface of water and (5) as a dust blown into the burrows and holes with a standard cyanogas dust pump.

At no time in the course of this rather extensive field trial have toxic symptoms attributable to alpha-naphthyl thiourea been observed in the workers or in the more than 500,000 residents of Baltimore who have come in contact either with the poison as such or with poisoned baits, and this despite what at times was undoubtedly very casual handling. Some dogs have, however, been accidentally killed. When alpha-naphthyl thiourea was administered in food to dogs under laboratory conditions a number were observed to vomit and so rid themselves of the poison. Retching has also been observed in dogs after intravenous administration of alpha-naphthyl thiourea; so it may be assumed that alpha-naphthyl thiourea has an emetic quality which would protect dogs under favorable conditions but not rats, since rats are not able to vomit.

There is doubtless still much to be learned on the effective use of alpha-naphthyl thiourea as a rodenticide, but we believe, on the basis of experiences described in this report, that procedures have been developed by which in an emergency the rat population of a city could be brought under control in a very short time.

LABORATORY OBSERVATIONS

Parallel to trials in the field, intensive studies were carried out in the laboratory. Some of these were directed toward the development of specifications for the product while the rest involved testing of various baits, comparison of alpha-naphthyl thiourea with other poisons and investigating the mechanism of action with a view to developing an antidote.

Of special importance, particularly during wartime, is the fact that the manufacture of alpha-naphthyl

6. The appropriations were made largely through the efforts of Mayor Howard B. Jackson and Mayor Theodore McKeldin and Dr. Huntington Williams, the commissioner of health.

thiourea does not involve any expensive materials or any of those on the critical list.

It has been found that the effectiveness of alpha-naphthyl thiourea depends to some extent on particle size: an average diameter of 5 to 10 microns has proved best for dusting work, while a larger size, approximately 100 microns, gives best results in food mixtures.

Alpha-naphthyl thiourea is very stable and does not deteriorate on prolonged storage. Because of its high melting point, 184 C., it is unaffected by temperatures well above those normally encountered. It is also practically insoluble in most liquids. Its solubility in water is somewhat higher in the presence of alkalis than in neutral or acid solutions but is still only a few milligrams per hundred cubic centimeters.

The bioassays and other tests were performed in large part with trapped wild rats provided by the city in partial return for the poison supplied by the Office of Scientific Research and Development. Special methods were developed for handling and housing large numbers of wild rats. An effective device was worked out for handling these rats without anesthesia,[7] by means of which wild rats taken from the streets could be removed from their cages, weighed, injected or tube fed and then returned to their cages at the rate of 20 or 30 per hour; this is only slightly longer than would be required to carry out the same operations on tame rats.

Large cylindric metal pens 10 feet in diameter and 4 feet high were constructed for use in observing the reactions of rats to various baits, poisoned and unpoisoned, in which the effectiveness of alpha-naphthyl thiourea and other poisons could be studied under controlled conditions. The results obtained in these pens on the voluntary acceptance by wild rats of various poison baits have proved fundamental to our work and have disclosed a number of previously unsuspected facts about the eating habits and general behavior of wild rats. In these pens we have found that alpha-naphthyl thiourea bait is eaten without hesitation by the rats, even in concentrations as high as 20 per cent; it has also been observed that the voluntary acceptance of alpha-naphthyl thiourea compares very favorably with other standard rodenticides.

Comparisons were made between the toxicity of alpha-naphthyl thiourea and other poisons that have been or are being used to exterminate rats. The poisons were administered to wild Norway rats by stomach tube. Alpha-naphthyl thiourea at an LD_{50} level of 7 mg. per kilogram was found to compare favorably with thallium sulfate at 16, zinc phosphide at 40, arsenic trioxide at 140, fortified red squill at 150 to 300 and barium carbonate at 1,500 mg. per kilogram of body weight. It is not so toxic to rats as 1080, the new rodenticide recently announced by the Fish and Wildlife Service,[8] but it has a much higher safety factor, because 1080 is much more toxic to all other animals, including man.

A number of experiments have been made on the toxicity of alpha-naphthyl thiourea to other animals. Only the Norway rat, the mouse and the dog were killed by doses less than 100 mg. per kilogram of body weight. The Alexandrine rat, the squirrel and the guinea pig required doses between 100 and 400 mg. per kilogram to succumb, while monkeys, rabbits and chickens were even more resistant: 5 Gm. per kilogram was required to kill 100 per cent of groups of chickens and monkeys.

A most interesting, but in some ways very disappointing, finding was that alpha-naphthyl thiourea does not have the same high toxicity for the Alexandrine or black rat, a common species of rat in many parts of the world but rarely found in Baltimore. It would appear that in general alpha-naphthyl thiourea is more effective on carnivorous than on herbivorous animals. In this connection may be mentioned the great differences in the toxicity of the parent compound thiourea which we have recently observed in three strains of Norway rats belonging to the same species but living on different diets.[9] With an LD_{50} of 4 mg. per kilogram for our stock of domestic rats, the value for another domestic colony was found to be 640 while for wild rats from the field it was 1,830 mg. per kilogram. When all three strains were fed our stock diet for extended periods of time, however, these differences in susceptibility were almost if not completely overcome and the same low LD_{50} value was approached by the two more resistant strains.

Since it had been observed that tolerance to phenyl thiourea could be built up in laboratory rats,[5] studies were initiated to investigate the same phenomenon with alpha-naphthyl thiourea and wild rats. It was found that wild rats develop a tolerance to alpha-naphthyl thiourea quite readily; in fact, some of our experiments indicate the existence of some degree of tolerance as early as two or three hours after ingestion. This tolerance disappears completely, however, in thirty to forty days after discontinuance of the poison. The basis for the development of tolerance in the wild Norway and the relation to the natural tolerance in the Alexandrine rat and in the other herbivorous animals has not been determined. It has been found, however, that young wild Norway rats, that is, below the age of puberty, have up to seven times as much natural resistance as is found in the same rats when they are mature.

Extensive experiments were undertaken on the mechanism of action and pathology of alpha-naphthyl thiourea, in part to work out an antidote and in part to determine whether information could be obtained to make the compound even more effective and possibly to discover new and more effective thioureas. From experiments that have been carried out on Norway rats and on dogs it is clear that in these two species death is due to the development of a drowning pulmonary edema. This edema results from a greatly increased permeability of the lung capillaries and possibly also from some slight damage to the lung capillaries. Neither the heart nor any other organ appears to be affected. The amount of the fluid which permeates the capillary walls and the speed with which it goes through the walls after the administration of the poison was beautifully demonstrated by experiments on dogs carried out by Dr. Cecil Drinker, who observed the lymph flow from the lungs and heart.[10] The flow of lymph began to increase within slightly more than ninety minutes after alpha-naphthyl thiourea was injected into the dog's vein and continued to increase at a rapid rate until at the end of eight hours it attained a level eighty times higher than

7. Emlen, J. T., Jr.: J. Wildlife Management **8**: 264 (July) 1944.
8. Kalmbach, E. R.: Science **102**: 232 (Aug. 31) 1945.
9. Dicke, S. H., and Richter, C. P.: J. Pharmacol. & Exper. Therap. **83**: 195 (March) 1945.
10. Drinker, C. K.: Pulmonary Edema and Inflammation, Harvard University Press, 1945, pp. 39-43.

that present before the administration of alpha-naphthyl thiourea. Dr. Drinker stated that in all his studies of lymphatic flow he had never seen anything to compare with it.

The mechanism involved in this increased permeability of the capillary membranes has not been determined. It is possible that alpha-naphthyl thiourea acts adversely on some enzyme system. The antioxidant action, which may be a property of alpha-naphthyl thiourea as well as of phenyl thiourea and thiourea, could also play a part. It is possible that alpha-naphthyl thiourea may act on some amino acids in the body, particularly cystine, since experiments in this laboratory have shown that, while small amounts of alpha-naphthyl thiourea administered chronically cause cessation of hair growth, this effect is counteracted by feeding suitable amounts of cystine.

The factors involved in the absorption of alpha-naphthyl thiourea in the body remain unknown. Despite its very low solubility in water alpha-naphthyl thiourea seems to be fairly rapidly absorbed in the body whether introduced orally or parenterally. The toxicity of alpha-naphthyl thiourea depends to a certain extent on the rate of absorption: the more rapidly it is absorbed, the more certain the animal is to die.

Thus in case of accidental or intentional human poisoning with alpha-naphthyl thiourea we recommend first of all immediate stomach lavage, secondly administration of oxygen possibly under increased pressure and thirdly the avoidance of fluids, particularly alkaline fluids. It may also be wise to avoid fats, since some of our evidence indicates that alpha-naphthyl thiourea may be more readily absorbed in their presence.

At this point attention may be drawn briefly to certain aspects of the chronic action of alpha-naphthyl thiourea, phenyl thiourea, and also of thiourea, which are of general physiologic interest quite apart from their relation to the problem of killing rats. All three drugs produce hyperplasia of the thyroid gland. This hyperactive condition of the gland apparently results from interference with the production of thyroid hormone. Mainly through the efforts of Dr. E. B. Astwood thiourea and more recently the closely related compound 2-thiouracil have come to be widely used clinically in the treatment of hyperthyroidism.[11] For this purpose it is obvious that the less toxic the thiourea derivative the greater advantage it has.

All the mono substituted thiourea derivatives we have tested produced pulmonary edema and pleural effusion in the laboratory rat. Apparently an inverse relationship exists between the pulmonary edema and the effusion, since we have observed that the edema is greatest during the first few hours after the poisoning and at a time when there is little pleural effusion. The longer the animals survive, the greater the effusion becomes and the less pronounced is the edema. It is interesting to note that administration of these thioureas to rats is followed within two hours by a definite and persistent lowering of body temperature; values below 94 F. are regularly observed.

The effects produced by the thioureas on the pigmentation of the skin and hair and on hair growth in black Norway rats are also very interesting. It has been observed in this laboratory that, while in nonlethal concentrations thiourea has little or no effect either on pigmentation or on hair growth, phenyl thiourea definitely destroys the pigment both in the skin and in the hair without affecting hair growth while alpha-naphthyl thiourea completely stops both pigment production and hair growth. Withdrawal of phenyl thiourea is followed in less than ten days by greatly increased pigment production, and similarly cessation of alpha-naphthyl thiourea treatment is followed by renewed pigment production and hair growth. These observations open up a wide field of investigation of the action of the compounds on enzyme systems and also on dietary constituents.

11. Astwood, E. B.: Treatment of Hyperthyroidism with Thiourea and Thiouracil, J. A. M. A. **122**: 78 (May 8) 1943.

SUMMARY

A new rat poison, alpha-naphthyl thiourea (abbreviated ANTU) has been discovered which compares very favorably with other rodenticides at present available as to cost, toxicity and voluntary acceptance by rats.

It is a relatively specific poison for Norway rats, being less toxic to all other species tested. Its emetic property protects dogs in most cases. No human fatalities or toxic symptoms in human beings have been observed during three years of extensive use in a city.

Experience gained from large scale municipal rat control campaigns, using alpha-naphthyl thiourea as the exclusive poison, indicates that observance of the following points is essential to success: 1. Poisoning should not be attempted in any area smaller than a whole city block at a time. 2. The coverage with poisoned bait must be scrupulously complete throughout the block. 3. The cooperation of residents is essential to the permanent control which must follow any intensive campaign. With suitable publicity, materials and cooperation the rat population of a large city can be substantially reduced in a short time should circumstances require it.

Alpha-naphthyl thiourea kills rats and dogs by its action on the capillaries of the lungs, producing drowning pulmonary edema. No antidote is yet available, but the great insolubility of alpha-naphthyl thiourea makes prompt stomach lavage a useful countermeasure. Should pulmonary edema develop following accidental human poisoning, oxygen should be administered but no fluids should be given either by mouth or intravenously.

Furthermore, alpha-naphthyl thiourea provides a valuable new tool for research, both in its acute effects involving so specific a site of action and such a rapid increase in lymph flow, and in its chronic effects, which parallel those obtained with thiourea and 2-thiouracil and in addition include disappearance of pigment and cessation of hair growth in black Norway rats.

Epidemic Typhus. — Epidemic typhus, as it is seen in eastern Europe or North Africa, is a fully established human infection, but there is fairly strong historical evidence that the typical disease has been known in Europe only since the fifteenth century. Zinsser's assumption that the typhus rickettsia is an ancient parasite of the rat and its fleas, and that the murine form is ancestral to the classical type spread from man to man by the louse, is fairly generally accepted. But in these rickettsial diseases we have a complex evolutionary problem in which the part played by the arthropod vector dominates the picture. There are good reasons for believing that the rickettsias are organisms which developed originally as saprophytes or semiparasites in the gut of the arthropod and were transmitted to the next generation through the egg.—Burnet, Frank MacFarlane: Virus as Organism, Cambridge, Mass., Harvard University Press, 1945.

USE OF THIOBARBITAL IN THE TREATMENT OF HYPERTHYROIDISM

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Astwood [1] has reported that diethyl thiobarbituric acid (thiobarbital) has antithyroid activity similar to that of thiouracil. Experiments on rats showed that thiobarbital in small doses was somewhat more effective in inhibiting thyroid function and perhaps less toxic than thiouracil. In larger doses, however, animals receiving thiobarbital were noted to have fatty infiltration of the liver. Astwood has been using thiobarbitol in clinical hyperthyroidism since February 1944 and has made a report on his results.[1a]

The opportune moment for our initial trial use of thiobarbital came in October 1944 when a patient receiving thiouracil developed a fever reaction necessitating discontinuance of treatment and in whom further antithyroid therapy was thought essential before thyroidectomy. This first patient to receive thiobarbital (chart 1) was an

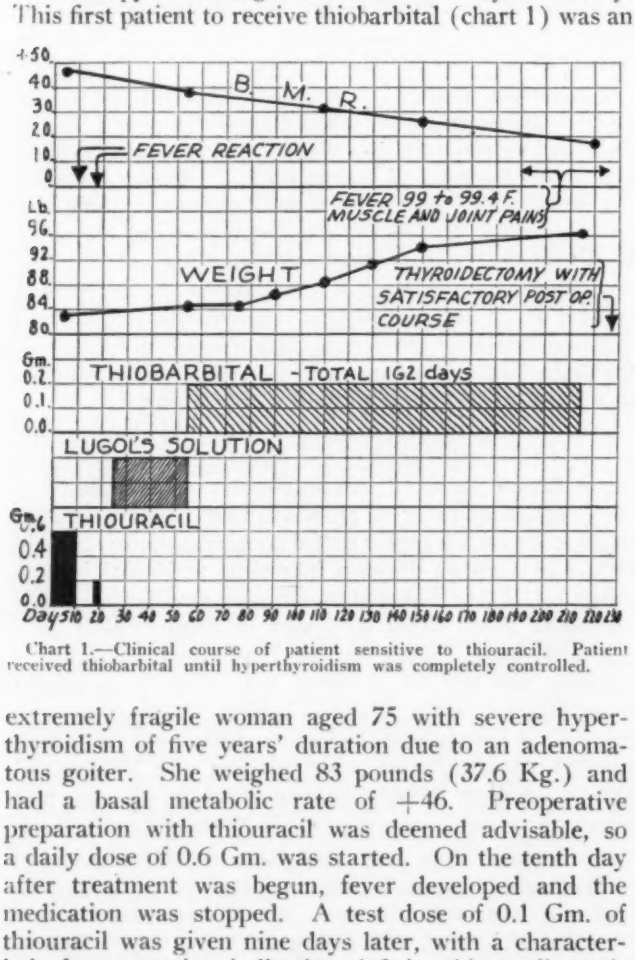

Chart 1.—Clinical course of patient sensitive to thiouracil. Patient received thiobarbital until hyperthyroidism was completely controlled.

extremely fragile woman aged 75 with severe hyperthyroidism of five years' duration due to an adenomatous goiter. She weighed 83 pounds (37.6 Kg.) and had a basal metabolic rate of +46. Preoperative preparation with thiouracil was deemed advisable, so a daily dose of 0.6 Gm. was started. On the tenth day after treatment was begun, fever developed and the medication was stopped. A test dose of 0.1 Gm. of thiouracil was given nine days later, with a characteristic fever reaction indicating definite thiouracil sensitivity. The patient was then given Lugol's solution for one month without clinical improvement. The weight remained stationary and there was no significant drop in the basal metabolic rate. Thiobarbital was then started in the daily dose of 0.2 Gm. There was slow but gratifying improvement during the following one hundred and sixty-two days. The basal metabolic rate fell to +16, with a gain in weight of 13 pounds (6 Kg.). During the last twenty-five days of treatment the patient had a slight elevation of temperature, with generalized muscle and joint pains. These untoward symptoms slowly subsided after the administration of thiobarbital was discontinued. Thyroidectomy was then done, with the patient having a satisfactory anesthesia and postoperative course. This first experience with thiobarbital certified that this drug has unquestionable antithyroid action in human beings and that sensitivity to thiouracil does not preclude its use.

Table 1.—*Hyperthyroid Patients Receiving Thiobarbital*

	Number of Cases
A	
Thiobarbital subsequent to thiouracil reaction	9
Thiobarbital administered initially	19
Total	28
B	
Thyroidectomy after thiobarbital treatment	21
Maintenance treatment	5
a. Malignant hypertension with primary hyperthyroidism	1
b. Polycystic kidneys with primary hyperthyroidism	1
c. Metastatic disease with adenomatus goiter	1
d. Thyrocardiac patient refusing operation	1
e. Recurrent primary hyperthyroidism	1
Hyperthyroidism controlled—operation refused—thiobarbital discontinued	1
Recurrent primary hyperthyroidism—thiobarbital sensitive—thiobarbital discontinued	1
Total	28

Thiobarbital [2] has now been used at the Lahey Clinic in the treatment of 28 patients (table 1) with hyperthyroidism; 9 patients received thiobarbital subsequent to thiouracil and 19 received thiobarbital initially. Nineteen patients had primary hyperthyroidism and 9 patients adenomatous goiter with hyperthyroidism. Twenty-one patients who had severe hyperthyroidism, 4 being classified as thyrocardiac, were given thiobarbital in a manner similar to our use [3] of thiouracil preparatory to thyroidectomy. Five patients are on maintenance therapy; 1 patient with malignant hypertension and primary hyperthyroidism, 1 patient with polycystic kidneys and uremia with primary hyperthyroidism,

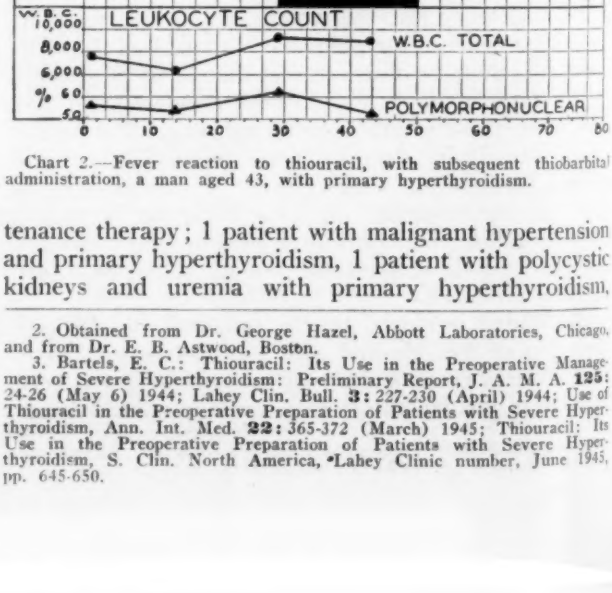

Chart 2.—Fever reaction to thiouracil, with subsequent thiobarbital administration, a man aged 43, with primary hyperthyroidism.

From the Department of Internal Medicine, the Lahey Clinic.

1. Astwood, E. B.; Bessell, Adele, and Hughes, A. M.: The Antithyroid Activity of Thiobarbital, Endocrinol. **36**: 72-74 (Jan.) 1945.

1a. Astwood, E. B.: Some observations on the Use of Thiobarbital as an Antithyroid Agent in the Treatment of Graves' Disease, J. Clin. Endocrinol. **5**: 345-352 (Oct.) 1945.

2. Obtained from Dr. George Hazel, Abbott Laboratories, Chicago, and from Dr. E. B. Astwood, Boston.

3. Bartels, E. C.: Thiouracil: Its Use in the Preoperative Management of Severe Hyperthyroidism: Preliminary Report, J. A. M. A. **125**: 24-26 (May 6) 1944; Lahey Clin. Bull. **3**: 227-230 (April) 1944; Use of Thiouracil in the Preoperative Preparation of Patients with Severe Hyperthyroidism, Ann. Int. Med. **22**: 365-372 (March) 1945; Thiouracil: Its Use in the Preoperative Preparation of Patients with Severe Hyperthyroidism, S. Clin. North America, Lahey Clinic number, June 1945, pp. 645-650.

1 patient with a metastatic mediastinal tumor and primary hyperthyroidism, 1 patient with recurrent primary hyperthyroidism and 1 patient, thyrocardiac with an adenomatous goiter, who refused operation after thiouracil preparation. One patient with severe recurrent primary hyperthyroidism was prepared for operation but refused it, so the medication was discontinued. One patient who was fever sensitive to thiouracil received thiobarbital for only eight days, when fever developed and treatment had to be discontinued.

Thiobarbital has been given to 9 patients who could not tolerate thiouracil because of the development of fever in 6, leukopenia and granulocytopenia in 1, granulocytopenia in 1 and swollen salivary glands in 1. Of the 6 patients in whom fever developed from thiouracil, 3 tolerated the thiobarbital (chart 2) but 1 patient developed both leukopenia and granulocytopenia after eight days of treatment, 1 patient had fever on the eighth day and 1 patient (chart 1) developed a mild fever after prolonged administration. The 2 patients (chart 3) in whom changes in the white blood cells took place and the 1 patient who developed swollen salivary glands (chart 4) from thiouracil were able to tolerate thiobarbital until maximum preoperative treatment was obtained.

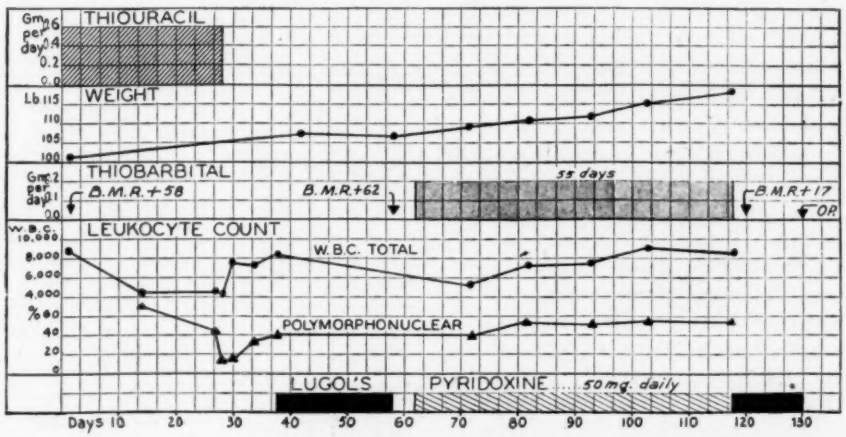

Chart 3.—Blood changes following thiouracil, with subsequent thiobarbital administration, in a woman aged 29, with severe primary hyperthyroidism.

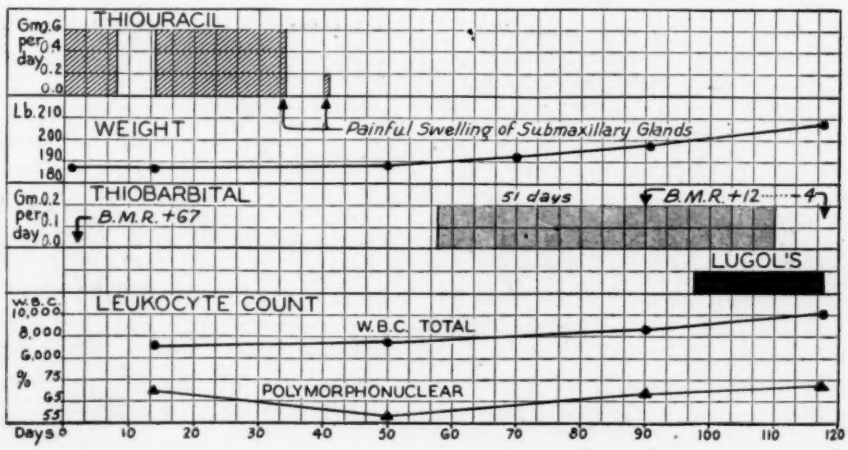

Chart 4.—Development of swollen salivary glands from thiouracil, with subsequent thiobarbital administration, in a woman aged 40, with recurrent primary hyperthyroidism (severe).

Of the 19 patients given thiobarbital as initial therapy, 5 developed toxic reactions. One developed fever on the eighth day and 1 on the twelfth day; the latter patient tolerated a reduced dose of 0.1 Gm. (chart 6) the initial dose being 0.2 Gm. Two patients developed agranulocytosis,[4] 1 on the fourteenth and the other on the twenty-fifth day of treatment. Moderate leukopenia and granulocytopenia (white blood cells 2,200, polymorphonuclear cells 39 per cent) developed in 1 patient on the twenty-first day. The 2 patients who developed agranulocytosis were treated successfully with penicillin (chart 5). The patient with moderate white cell changes was asymptomatic but she was also given penicillin. The white blood cells returned to normal in eight days. The 4 patients in whom the thiobarbital was stopped received Lugol's solution to complete the preoperative preparation.

Of the total 28 patients (9 patients receiving thiobarbital after thiouracil and 19 receiving thiobarbital initially) 8 (table 2), or 28 per cent, developed toxic symptoms. In 7 patients the treatment was discontinued; 1 patient tolerated a reduced dose. This percentage of reactions from thiobarbital is about three times as great as that which we observed from the administration of thiouracil, with which 23 reactions[5] occurred in 196 patients, or 11 per cent.

The reactions to thiobarbital were found to be just as prevalent on a dose of 0.2 Gm. as on a dose of 0.1 Gm., 4 in each instance. One patient (chart 6), however, was found to tolerate a dose of 0.1 Gm. after fever developed from the 0.2 Gm. dose. Seven patients who received 0.05 Gm. had no toxic manifestations. Further observations of a large series will be necessary to determine whether there is a relation between size of dose and chance of a toxic reaction which was not found with thiouracil when reactions occurred on very small doses. As with thiouracil, no relationship was noted between duration of treatment and onset of reaction. With thiouracil most fever reactions occurred on the ninth to tenth day, with thiobarbital on the eighth to twelfth day and in 1 case after five months of treatment. This experience with the increased frequency of reactions to thiobarbital has led to the therapeutic policy of resorting to thiobarbital only for patients who have reactions to thiouracil. In this role it has been of great help.

DURATION OF TREATMENT

Response to treatment was found to be similar in every respect to that observed with thiouracil. Improvement occurred within seven days of starting therapy and continued until full control of all objective and subjective signs and symptoms of hyperthyroidism was obtained. In the use of thiobarbital as with thiouracil, it was found that it took approximately one day of treatment for each percentage of elevation of metabo-

4. Of the 2 patients developing agranulocytosis, 1 received pyridoxine and the other folic acid with the thiobarbital. Neither substance seems to prevent the development of blood changes.

5. Bartels, E. C., and Blizard, E. C.: Toxic Reactions to Thiouracil, Lahey Clin. Bull. 4: 150-158 (July) 1945.

lism, as shown by 9 cases with an average initial basal metabolic rate of +46. The average final basal metabolic rate was +8 after an average of forty-one days of treatment. Previous iodine therapy retarded the action of thiobarbital as it did with thiouracil. The dose of 0.2 Gm. daily was used for the first patients treated, but at the suggestion of Dr. Astwood the dose was cut to 0.1 Gm. a day. The response seemed as prompt and satisfactory, so now a dose of only 0.05 Gm. is being used, with speed of improvement comparable to that observed with the larger doses. The length of time thiobarbital was administered to the 28 patients varied from eight to one hundred and seventy-three days.

Those patients having thyroidectomy after optimum preparation with thiobarbital had an anesthesia and a postoperative course equally satisfactory to those patients receiving thiouracil preparation. Of the patients having operation, 21 had subtotal thyroidectomy. There was no postoperative death. The pathologic report on the thyroid tissue removed was in no way different from that after treatment with thiouracil.

The thiobarbital treated patients were given iodine for three weeks preoperatively to accomplish involution of the thyroid gland, as with thiouracil management.[6] No surgical difficulty was encountered in the removal of these thyroid glands.

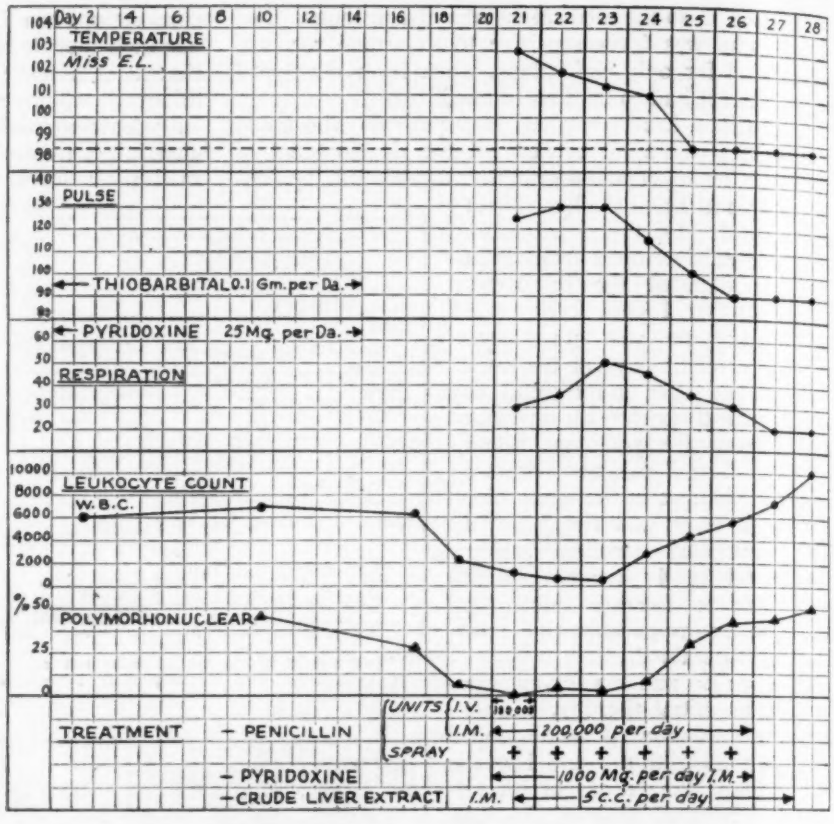

Chart 5.—Agranulocytosis after administration of thiobarbital for fourteen days. Recovery following penicillin treatment. Note failure of pyridoxine to prevent blood changes. The case was one of severe primary hyperthyroidism during one year, with weight loss of 30 pounds (13.6 Kg.), basal metabolic rate + 40.

SUMMARY

1. Twenty-eight patients with hyperthyroidism have received thiobarbital, and definite and satisfactory antithyroid response was obtained in all.

2. Of 9 patients in whom toxic reactions to thiouracil developed, 7 tolerated thiobarbital, accomplishing complete relief of hyperthyroidism.

TABLE 2.—*Reactions to Thiobarbital*

	Cases
A. Fever	
a. 12th day	1
b. 8th day	2
d. Fever late (after 5 months of treatment)	1
B. Changes in white blood cells	
a. Leukopenia with granulocytopenia, 8th day	1
b. Leukopenia with granulocytopenia, 21st day	1
d. Agranulocytosis	
1. 14th day	1
2. 25th day	1
Total	8

3. Eight of the 28 patients receiving thiobarbital, or 28 per cent, developed toxic reactions to the drug. Depressive changes in the white blood cells were the only serious reactions. Two patients developed agranulocytosis. There was no death due to the drug.

4. The time required to control hyperthyroidism with thiobarbital was found to be the same as that with thiouracil. The antithyroid effect of thiobarbital is apparently twelve times that of thiouracil, since 0.05 Gm. of thiobarbital accomplished the same result as 0.6 Gm. of thiouracil was observed to accomplish. Since no side effects were observed with the smaller dose (0.05 Gm.), further studies with this dose seem justified to determine its clinical effectiveness.

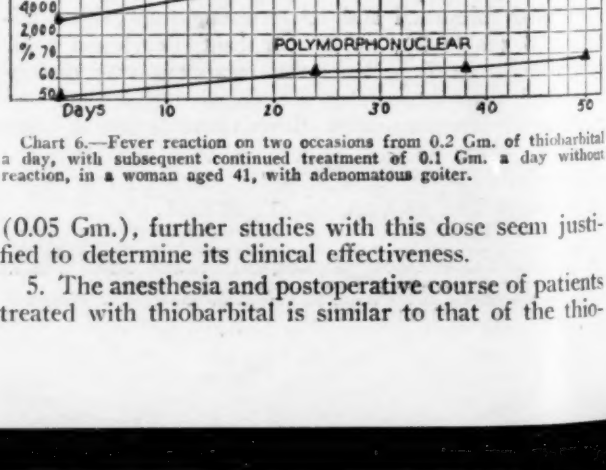

Chart 6.—Fever reaction on two occasions from 0.2 Gm. of thiobarbital a day, with subsequent continued treatment of 0.1 Gm. a day without reaction, in a woman aged 41, with adenomatous goiter.

5. The anesthesia and postoperative course of patients treated with thiobarbital is similar to that of the thio-

6. Lahey, F. H.: The Combination of Lugol's Solution with Thiouracil in the Preoperative Preparation of Patients with Toxic Goiter, Lahey Clin. Bull. **4**: 2-3 (July) 1944; Thiouracil, editorial, Surg., Gynec. & Obst. **81**: 335-336 (Sept.) 1945. Lahey, F. H.; Bartels, E. C.; Warren, Shields, and Meissner, W. A.: Thiouracil: Its Use in the Preoperative Treatment of Severe Hyperthyroidism, Surg., Gynec. & Obst. **81**: 425-439 (Oct.) 1945.

uracil treated patient. The combined use of thiobarbital and iodine produced satisfactory involution of the thyroid gland.

6. The high percentage of reactions to thiobarbital has led to the use of thiobarbital for only those patients unable to tolerate thiouracil.

DIAGNOSIS OF CHANCROID

THE RELATIVE EFFICIENCY OF BIOPSIES, CULTURES, SMEARS, AUTOINOCULATIONS AND SKIN TESTS

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The methods employed at present for the diagnosis of chancroid are far from satisfactory. Current textbooks indicate that accurate diagnosis can be based on the clinical features, on the results of skin tests or on examination of stained smears. Most venereologists, however, know that each of these methods is subject to major limitations and errors. Actually at present the diagnosis is usually based on negative dark field examinations for spirochetes and on clinical improvement after institution of sulfonamide therapy. The establishment of reliable criteria for a positive diagnosis of chancroid would unquestionably be of value.

The present article is a report on the relative efficiency and usefulness of a number of diagnostic procedures in chancroid. These findings were obtained during an intensive study of a group of 125 patients suspected of having either chancroid or lymphogranuloma venereum. Efforts were made to culture the Ducrey bacillus or to demonstrate the presence of the virus of lymphogranuloma venereum whenever feasible. In addition, most of the commonly recommended diagnostic procedures for both diseases were carried out. A positive diagnosis of chancroid was established in 60 of the 125 cases by culture, by biopsy or by both methods. It is our purpose to discuss the practical value and limitations of these two procedures and to compare them with such methods as smears, skin tests and autoinoculations. To our knowledge there has been no comparable study in which evaluation of diagnostic tests has been based on proved cases of chancroid.

METHOD OF STUDY

Patients selected for this study were admitted to a special clinic in the Genitoinfectious Disease Department of Grady Hospital. At the first visit a complete history was taken and physical examination was made; blood specimens were collected and dark field examinations, smears, cultures, autoinoculations, skin tests and biopsies were carried out. Patients were instructed to return at the end of forty-eight hours for a reading of skin tests and autoinoculations and for repetition of smears and cultures. Chemotherapy was begun at that time. Patients then returned at weekly intervals for the first month and every two or three weeks thereafter for a period of at least ten weeks. At each visit blood was taken for Kahn and Wassermann tests, protein determinations and complement fixation tests for lymphogranuloma venereum. Skin tests were also repeated when indicated.

Of the 125 patients admitted to the study, a diagnosis of chancroid was regarded as established in 60 by biopsy, by culture or by both methods. All of these 60 patients were Negroes; 38 were males and 22 were females. The duration of symptoms ranged from three to forty-two days, the average being sixteen days. Of the remaining 65 patients 14 were proved to have lymphogranuloma venereum by virus isolation, 6 were contacts of these cases and 14 had other genital lesions such as syphilis, granuloma inguinale and herpes. Eight patients became delinquent before sufficient laboratory studies had been obtained. The diagnoses in the remaining 23 cases (in 20 of which there were no primary lesions) could not be established with certainty. Eighteen of them appeared clinically to be lymphogranuloma venereum while 5 appeared to be chancroid.

BIOPSY

The histologic changes occurring in chancroid are generally believed to be nonspecific. For this reason biopsy has seldom been employed as a diagnostic method. In addition, the removal of tissue from the genitalia has been regarded as too formidable a procedure for routine clinic practice. Greenblatt,[1] however, has recently indicated that the histologic changes occurring in chancroid may occasionally suggest the diagnosis and that biopsy may at times be of value.

In this investigation the histology of chancroid has been carefully studied and we believe that the histologic pattern of this infection is sufficiently distinct to permit a reasonably certain diagnosis in nearly every instance. In fact, in our experience biopsy appeared to be the most efficient single method of diagnosis. Biopsy can be performed in an outpatient clinic with relative ease. Our practice was to remove a portion of tissue from the ulcer or wall of a ruptured bubo with a Gaylors biopsy forceps. No anesthesia was used, and it was possible to obtain a fragment of tissue averaging 3 mm. in diameter with little pain and without troublesome bleeding. Biopsies were done in 59 of the 125 cases in this series, and a histologic diagnosis of chancroid was made in 45 instances. In 35 of these the diagnosis of chancroid was confirmed by positive culture for the Ducrey bacillus. In all 10 cases in which the organism could not be cultured the clinical features were consistent with the diagnosis of chancroid. In the remaining 14 cases lymphogranuloma venereum was diagnosed in 7, granuloma inguinale in 2, syphilis in 2 and nonspecific inflammatory process in 3.

A description of the technic for histologic diagnosis of chancroid has been given in detail in another article.[2] For good results it is essential that care be observed in the fixing and staining of the tissue. On examination of the sections, the lesion is found to consist of three zones. The surface zone or base of the ulcer is rather shallow and is made up of polymorphonuclear leukocytes, fibrin, red blood cells and necrotic tissue. Below this is a fairly wide layer of edematous tissue in which endothelial cells in various stages of proliferation outnumber all other cellular components. Newly formed blood vessels are numerous and may show palisading with occasional degeneration of the vessel walls and thrombosis. Finally there is a deep zone in which

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From the Departments of Medicine and Pathology, Emory University School of Medicine, the Clinic for Genitoinfectious Diseases, Grady Hospital, and the Georgia Department of Public Health.

1. Greenblatt, R. B.: Management of Chancroid, Granuloma Inguinale and Lymphogranuloma Venereum in General Practice, Ven. Dis. Inform., 1943, supp. 19, p. 8.

2. Sheldon, W. H., and Heyman, A.: Studies on Chancroid: I. Observations on the Histology with an Evaluation of Biopsy as a Diagnostic Procedure, Am. J. Path., to be published.

there is a dense infiltration by plasma cells and lymphocytes. Demonstration of Ducrey bacilli in the tissue is occasionally possible.

CULTURE

Demonstration of the etiologic agent is obviously a desirable method of diagnosis but is rarely employed. Teague and Deibert [3] in 1920 reported very favorably on the possibilities of culture diagnosis, but more recent writers have not recommended it. During the present study considerable attention was devoted to the possibilities of the cultural method of diagnosis, and some success was attained. The technic eventually adopted, a modification of that used by Teague and Deibert, has been described in detail elsewhere.[4] Whole defibrinated rabbit blood was used as a culture medium, and diagnosis was based on recognition of the typical morphology and staining of the Ducrey organisms in smears of the culture after twenty-four to forty-eight hours' incubation.

In this series cultures were made of all genital lesions and of all material aspirated from buboes. Cultures were positive for the Ducrey bacillus on one or more occasions in 50 patients. In 10 additional patients culture was negative but biopsy revealed the typical microscopic appearance of the chancroid lesion. In these 10 cases the lesions were either in the vagina or on the cervix or had been present for a long time. Since such lesions are nearly always heavily contaminated by other bacteria, cultural demonstration of the Ducrey bacillus is difficult.

Cultures of primary lesions were positive more frequently than were cultures of the associated buboes. Only 11 of 24 bubo cultures in the 60 proved cases of chancroid were positive.

SKIN TEST

Although opinions have varied as to its specificity and sensitivity, the skin test with Ducrey vaccine has been widely used as a specific diagnostic test for chancroid. Some workers [5] have reported positive skin reactions in approximately 95 per cent of the cases of chancroid. Others [6] found that only 70 to 80 per cent of the cases showed positive skin tests. It is noteworthy that these reports were based on clinical diagnosis only.

In the present study all patients were tested with a commercial Ducrey vaccine (Lederle). The development of an area of induration 6 mm. or more in diameter forty-eight hours after the inoculation was regarded as a positive reaction. Positive skin tests were found in only 46 of the 60 proved cases of chancroid. In 10 of the 14 patients who originally showed negative reactions, skin tests were repeated four to ten weeks later and were still negative.

A further limitation of the value of the skin test for chancroid lies in the fact that the positive reaction persists for years after its development. One cannot be certain, therefore, whether a positive test represents the existing infection or a previous one. In this connection we have recently carried out a skin test survey on 473 Negro hospital patients, none of whom were known to have had chancroid recently. Approximately one third of adults over 25 years of age gave a positive reaction.[7]

Even when skin tests for both chancroid and lymphogranuloma venereum are done, the results may be confusing. Positive reactions for lymphogranuloma venereum are very commonly encountered in Negroes. In the group of 60 proved cases of chancroid, 20 patients gave positive skin reactions for both diseases. Twenty-six patients reacted only to the Ducrey vaccine, while in 4 patients the results of the skin tests were entirely misleading, the Ducrey reaction being negative and the lymphogranuloma venereum test being positive. It is obvious, therefore, that skin tests alone are of limited value in the differential diagnosis of chancroid.

AUTOINOCULATION

The value of autoinoculation as a diagnostic method was investigated in 36 of the 60 proved cases of chancroid. In this procedure a loopful of exudate from the genital ulcer is rubbed into a scarified area on the forearm. The area is then bandaged and kept covered for forty-eight hours, at which time the result is determined. A take is indicated by the development of small pustules or ulcerations in which Ducrey bacilli can be identified either by smear or by culture. In 20 of the 36 cases a positive diagnosis was possible from the autoinoculation; in the remaining 16 cases no lesion developed in forty-eight hours. There were only 2 cases in the entire series wherein the Ducrey bacillus was cultured successfully from the autoinoculation and not from the primary lesion.

Autoinoculation has several disadvantages. As noted in the foregoing paragraph, lesions do not always develop at the site of the inoculation. Furthermore, the development of a pustular lesion is not proof of the diagnosis of chancroid, since pyogenic bacteria may be transferred from the genital lesion. Autoinoculation therefore still imposes the necessity of proving the diagnosis by the use of smears or cultures. Moreover, the establishment of a new area of infection is not devoid of danger. While the lesion is inconsequential at the end of forty-eight hours and recedes promptly with sulfonamide therapy, it may, without treatment, develop into a serious infection. A few patients in this series neglected to return to the clinic for a week or more, at which time large chancroidal infections of the arm had developed. Another disadvantage of autoinoculation is that it necessitates delay in treatment, since sulfonamides must be withheld until the result can be determined. For these reasons we believe that autoinoculation is of limited value as a method of diagnosis and that it cannot be recommended for general use.

SMEARS

It would indeed be convenient if a diagnosis of chancroid could be made in a majority of cases simply by demonstrating Ducrey bacilli in stained smears from genital lesions. Different workers have reported varying success with the method. Among recent favorable reports are those of Greenwald,[8] who obtained positive smears in 65 per cent of 76 soldiers thought to have chancroid, and of Kornblith, Jacoby and Chargin,[5] who

3. Teague, O., and Deibert, O.: The Value of the Cultural Method in Diagnosis of Chancroid, J. Urol. **4**: 543, 1920.

4. Beeson, P. B., and Heyman, A.: Studies on Chancroid: II. Efficiency of the Cultural Method of Diagnosis, Am. J. Syph., Gonor. & Ven Dis., to be published.

5. Kornblith, B. A.; Jacoby, A., and Chargin, L.: Chancroid: Treatment with Sulfathiazole and Sulfanilamide, J. A. M. A. **117**: 2150 (Dec. 20) 1941. Saunders, H. C.; Canizares, O., and Reider, R. F.: Chancroid: A Comparative Study of the Ito Test Made with Three Vaccines, New York State J. Med. **39**: 447, 1939.

6. Knott, L. W.; Bernstein, L. H. T.; Eagle, H.; Billings, T. E.; Zobel, R. L., and Clark, E. G.: The Differential Diagnoses of Lymphogranuloma Venereum and Chancroid by Laboratory and Skin Tests, Am. J. Syph., Gonor. & Ven. Dis. **27**: 657, 1943. Robinson, H. M.: Analysis of Intracutaneous Tests on 309 Patients for Lymphogranuloma Venereum and Chancroid, South. M. J. **33**: 144, 1940.

7. Heyman, A., and Beeson, P. B.: Studies on Chancroid: III. Ducrey Skin Reactions in Negro Hospital Patients, J. Ven. Dis. Inform., to be published.

8. Greenwald, E.: Chancroidal Infection: Treatment and Diagnosis, J. A. M. A. **121**: 9 (Jan. 2) 1943.

claimed a positive diagnosis from smears in 88 per cent of 175 cases. On the other hand, many workers are less enthusiastic about this method. In the U. S. Army, for example, smears are not recommended.[9]

The diagnosis of chancroid by means of direct smears is based on certain characteristics of morphology, staining and arrangement of the Ducrey bacilli. The organisms are short, plump, gram negative bacilli with rounded ends. When stained by the method of Pappenheim or Sellers they exhibit a tendency to bipolar staining which gives some of them the "closed safety-pin" appearance. The Ducrey bacilli may be situated intracellularly, but more often they lie outside the cells, singly or in small clusters, as shown in the photomicrograph. Greenblatt [4] and Kornblith, Jacoby and Chargin [5] have stressed the "school of fish" arrangement in which the bacilli are grouped in long parallel columns between cells or shreds of mucus. This arrangement was noted in only a few cases in this series.

Another feature of the direct smear which is often mentioned [10] is the finding of Ducrey bacilli in long chains. In our experience this is also a very rare occurrence.

The positive smears in chancroid usually show relatively few organisms, particularly in early lesions. In advanced cases, especially in female patients, smears are frequently crowded with different bacteria, and under these circumstances it is impossible to make a diagnosis. Some writers have advised that in such cases cleansing soaks should be applied for a day or two and the smear examination then repeated. We have not regarded this practice as desirable, since it would necessitate withholding therapy for one or more days.

In this study smears were made from lesions and bubo material whenever possible. We were able to obtain a positive diagnosis of chancroid by examination of smears in 31 of the 60 proved cases. Ducrey bacilli were seldom found in smears of bubo pus, even when their presence was subsequently established by culture.

In examining smears it was found advantageous to use both Gram and Pappenheim stains. The Gram stain gives a comprehensive picture of the bacterial flora present in the lesion. When organisms showing the typical morphology, staining and arrangement of Ducrey bacilli are seen in the Gram stain, and when the Pappenheim stain subsequently reveals the presence of "safety-pin" forms, the diagnosis of chancroid is reasonably certain.

COMMENT

A positive diagnosis of chancroid can be made in a high proportion of cases by the use of appropriate diagnostic procedures. No one method will be applicable in all cases, and the diagnostic procedure must be selected for individual cases.

The choice of diagnostic tests in the presence of a primary lesion depends principally on the size of the ulcer and duration of the infection. In small early lesions removal of tissue for biopsy is likely to be painful and is therefore inadvisable. Fortunately, in these cases the diagnosis by culture or smear is most likely to be successful, since there is usually little secondary bacterial invasion. In more advanced lesions biopsy is feasible and efficient, and in these cases secondary contamination impairs the efficiency of culture and smear diagnosis.

In patients who exhibit inguinal adenopathy without primary genital lesions, a differential diagnosis between chancroid and lymphogranuloma venereum may be impossible. Biopsy is not applicable and, as shown in the foregoing section, cultural demonstration of the Ducrey bacillus often fails. Even when laboratory facilities for demonstration of the virus of lymphogranuloma venereum are available, as in this investigation, the etiologic agent may not be found. It is our belief, nevertheless, that the majority of these cases are lymphogranuloma venereum infections.

SUMMARY

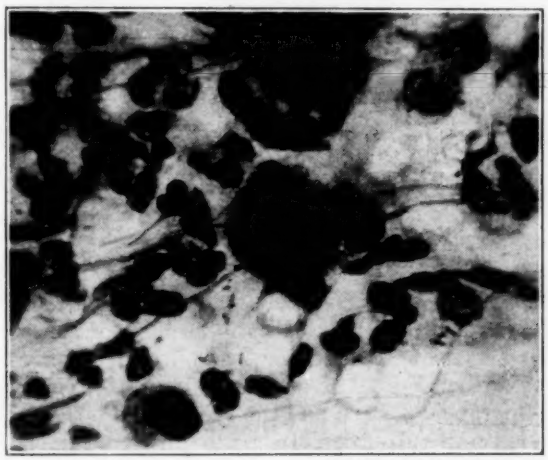
An intensive study was made of a group of 125 cases suspected of being either chancroid or lymphogranuloma venereum. A positive diagnosis of chancroid was made in 60 of them. Of the various methods, biopsy appears to be the most efficient single method of diagnosis and can be depended on to give a diagnosis in over 90 per cent of the cases in which it is applicable. Its use is limited to cases in which there are primary genital lesions. The removal of tissue for biopsy is in most instances a simple procedure, well suited to outpatient work. It is undesirable, however, in patients with small lesions because of the pain involved.

Cultural demonstration of the Ducrey bacillus can be accomplished in at least 75 per cent of all cases. The technic is not difficult and can be carried out by a competent technician. Culture is less likely to be successful in advanced lesions which are heavily contaminated with other bacteria. It is the only means of obtaining a positive diagnosis in patients with buboes but without primary lesions.

Diagnosis by direct smears of genital lesions is possible in approximately 50 per cent of cases. This method has the advantage of simplicity and immediate diagnosis. Unfortunately, it is likely to be useless in advanced lesions, in which there is a heavy growth of other bacteria.

Autoinoculation has several disadvantages and does not take with sufficient frequency to make it of value in routine work.

The skin test for chancroid should never be relied on as the sole method of diagnosis, although it may



Ducrey bacilli in a smear of a primary genital lesion. Methylene blue stain. Magnification 1,100 diameters.

9. Diagnosis and Treatment of Venereal Diseases, Circular Letter No. 74, Office of the Surgeon General, Washington, D. C., Government Printing Office, July 25, 1942, paragraph 5.

10. Koteen, H.: Lymphogranuloma Venereum, Medicine **24**: 1, 1945. Pullen, R. L.: Medical Diagnosis, Philadelphia, W. B. Saunders Company, 1944, p. 567.

be of limited value as an adjuvant to other procedures. In this group of 60 proved cases of chancroid, positive skin tests were found in only 46 cases (77 per cent). A further disadvantage lies in the fact that a positive skin reaction persists for many years after an infection and therefore may not be significant in reference to the present illness.

The diagnosis of chancroid can in the majority of cases be established by suitable laboratory procedures.

ADDENDUM

After this paper was submitted for publication, a relevant report on chancroid was published.[11] In this study Strakosch and his associates based the diagnosis of chancroid on the history and clinical manifestations. Among 370 cases so diagnosed they obtained positive skin tests in 70 per cent, positive cultures in 59 per cent and positive smears in 43 per cent. They did not do autoinoculations or biopsies.

ELECTROENCEPHALOGRAPHIC FINDINGS IN CENTRAL NERVOUS SYSTEM SYPHILIS

BEFORE AND AFTER TREATMENT WITH PENICILLIN

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Several authors [1] have published reports on the cerebral electroactivity of patients with syphilis of the central nervous system. They agree that no correlation exists between the degree of abnormality of the electroencephalographic pattern and the type, the severity or the duration of the disorder. In the majority of the cases a definitely but nonspecifically abnormal electroencephalogram, or an electroencephalogram on the borderline between normal and abnormal, is found. However, enough patients with various types of neurosyphilitic disorders present electroencephalographic records "within normal limits" to detach from this procedure any immediate diagnostic significance.

After fever treatment has been completed, the abnormal cerebral electroactivity of neurosyphilitic patients often returns to normal or at least improves greatly. The changes of a previously abnormal pattern to normal seem to be correlated with the therapeutic success. Patients whose pathologic process is arrested by the fever but who retain residual symptomatology also retain many of the electroencephalographic abnormalities. Patients who recover without easily demonstrable signs present electroencephalograms with essentially normal qualities. Thus, although the presence in the electroencephalogram of moderate or pronounced abnormal features possesses no specific value for the initial diagnosis or prognosis of neurosyphilis, the change of the previously abnormal pattern can be used to advantage to determine the effect of antisyphilitic treatment in some instances.

To determine whether treatment with penicillin has any influence on the cerebral electroactivity, patients suffering with neurosyphilis and receiving treatment with penicillin in Duke Hospital were given electroencephalograms before and directly after treatment with this therapeutic agent. Many of the patients were reexamined at intervals after their discharge from the hospital.

The records of 38 patients are included in this study. Of these, 26 had dementia paralytica, 7 patients dementia paralytica with tabes, 1 tabes dorsalis, 1 meningovascular syphilis and 3 asymptomatic neurosyphilis.

The electroencephalograms were obtained with the standard method now employed in many laboratories. Silver disk electrodes were placed over the anterior frontal region, the posterior frontal region, the parietal region and the occipital region, on both sides, 2 to 4 cm. from the midline. These were connected with amplifiers (electroencephalographs) built by Mr. A. M. Grass. Six monopolar tracings or six dipolar tracings in different relative arrangements were recorded simultaneously. If cooperation could be obtained, the patient was asked in each case to overventilate for five minutes.

The records are classified into eight categories: 1. Regular rhythmic-repetitive activity; stable to overventilation. 2. "Within normal limits," i. e., a pattern showing normal amplitude with some irregularity of form and occasional sudden changes of frequency; stable to overventilation. 3. "Within normal limits" during the resting state but during overventilation showing occasional bursts of large waves of abnormal form and of shifting frequency. 4. "Within normal limits" during the resting state but affected by five minutes of overventilation to the point of complete disorganization of the pattern lasting for more than thirty seconds after the end of the procedure. 5. During rest a pattern consistently irregular with unstable and frequently enlarged amplitude, with shifting frequency but without further pronounced disorganization during and after five minutes of overventilation. 6. Severely irregular pattern during rest, with further pronounced disorganization during and after overventilation but still with occasional vestiges of relatively organized activity. 7. Continued cerebral dysrhythmia without any trace of "normal" pattern, characterized by large slow and fast waves of consistently erratic form. 8. Focal disturbance of abnormal hemispheric asymmetry.

When classified in this manner twelve electroencephalograms fell within groups 1 to 4 inclusive while twenty-six records showed definite abnormalities of varying degrees. In agreement with previous reports, no correlation existed between the severity of the clinical manifestations and the measure of electroencephalographic abnormality. However, without knowing the clinical history it was possible, because of certain electroencephalographic patterns, to divide the patients roughly into two groups. In the 34 patients with

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encephalitic involvement (dementia paralytica, meningovascular syphilis and dementia paralytica with tabes) all but 3 showed moderate to decidedly abnormal electroencephalograms. The 1 patient with meningovascular syphilis showed unilateral abnormal electroactivity. The 4 patients without encephalitic involvement (tabes dorsalis and asymptomatic neurosyphilis) showed essentially normal electroencephalographic patterns.

Immediately after treatment with 4,000,000 units of penicillin, 50,000 units being given intramuscularly every three hours for eighty consecutive injections, twenty-four records alined themselves within groups 1 to 4 and only fourteen tracings remained with definitely abnormal cerebral electroactivity. However, before treatment group 7 contained eleven records while after treatment this most severely disturbed electroactivity was found in only 1 patient, and this patient had a severe clinical Herxheimer reaction.

The following case report may serve as an illustration of a patient with dementia paralytica:

D. P. D., a white man aged 33, single, developed a penile sore in 1938 and from October 1940 to November 1944 received a total of 54 injections of bismuth, 54 injections of neoarsphenamine and 74 injections of oxophenarsine hydrochloride (mapharsen). In spite of this antisyphilitic therapy there had been a progressive loss of memory, loss of judgment, incoherence of speech, severe headache and inability to take care of his own personal needs, such as shaving and dressing. This finally progressed to incontinence of feces and urine.

Examination revealed that the superficial and deep reflexes were equal, active and physiologic. Plantar response was extensor bilaterally. The Romberg test was negative. The Hoffmann test was positive bilaterally. Speech was slow and slurred, and the patient could not enunciate words or phrases. His memory was very poor. There was an inability to obey simple orders, and as a result visual field examination and sensory examinations were impossible. Blood serologic tests for syphilis were consistently positive.

The tracing shows the electroencephalograms of the patient before treatment, immediately after treatment with penicillin and about two months later. A normal electroencephalogram is reproduced for comparison.

Clinically after treatment with penicillin the patient showed much improvement, which has persisted. When seen on April 10, 1945 he was holding down a fairly responsible job in a bakery.

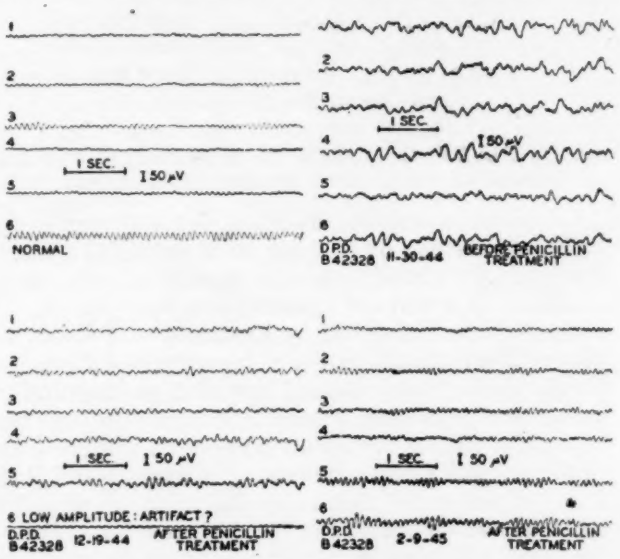
In some cases the clinical results were not necessarily manifested in their electroencephalographic findings. Cases with pronounced clinical improvement and continued abnormal cerebral electroactivity occur in our series as well as cases with slight or negligible clinical improvement whose formerly abnormal electroencephalographic pattern returned to relative regularity and stability.

Cerebrospinal Fluid Findings

Date	Cells	Pandy	Total Protein, Mg. per 100 Cc.	Spinal Fluid Wassermann	Colloidal Mastic
11/29/44	41	3+	104	4+ with 0.1 cc.	5432100
12/ 5/44	2	3+	134	4+ with 0.1 cc.	5555540
12/ 9/44	5	0	77	4+ with 0.1 cc.	5544321
2/ 8/45	0	0	49	4+ with 0.1 cc.	3210000
4/10/45	0	0	48	4+ with 0.1 cc.	3210000

Treatment was started on Nov. 30, 1944 and was completed on December 9 with the patient having received 4,000,000 units of penicillin intramuscularly.

The abnormalities of the electroencephalogram are interpreted as the expression of local anoxia and a generalized or localized inflammation. In most cases these processes are apparently permanently reversible. In other cases irritation due to scarring or local intermittent anoxia may well prevent the cerebral electroactivity from reverting to regularity. Ross [2] has recently shown that months after clinical recovery patients with nonsyphilitic encephalitis and meningoencephalitis have



Tracings before treatment, immediately after treatment with penicillin and about two months later, contrasted with a normal encephalogram.

electroencephalograms that vary in the regularity or irregularity of pattern independently of the clinical picture. It should also be borne in mind that unquestionably abnormal electroencephalograms are found in a considerable percentage of the general population although these persons may have no subjective complaints, and neurologic and psychiatric examinations reveal no abnormal findings. Mental status and brain wave pattern, at least at the level of today's interpretation, are incommensurable.

SUMMARY

1. The electroencephalograms of 38 patients suffering from neurosyphilis were studied before and after penicillin treatment.

2. In agreement with previous reports by other authors, no correlation is found between the severity of the neurosyphilitic disorder and the presence or absence of electroencephalographic abnormalities.

3. After penicillin treatment (4 million units within ten days) many formerly abnormal electroencephalograms became normal and most of the remaining records show varying degrees of improvement. No invariable correlation exists between the clinical results of the treatment and the electroencephalographic changes.

4. The abnormal electroencephalograms are interpreted as the consequence of local cerebral anoxia and of generalized or localized cerebral inflammation. Many of these abnormalities are apparently reversible.

5. The presence of abnormal cerebral electroactivity seems to indicate definite encephalitic involvement.

6. Our findings indicate that the electroencephalogram can often be used as a valuable adjunct in determining the effect of penicillin treatment in central nervous system syphilis.

2. Ross, I. S.: Electroencephalographic Findings During and After Acute Encephalitis and Meningoencephalitis, J. Nerv. & Ment. Dis., to be published.

INTRAMUSCULAR AND SUBCUTANEOUS ADMINISTRATION OF PENICILLIN IN BEESWAX-PEANUT OIL

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Of various methods described for prolonging the action of penicillin by delaying its absorption or excretion,[1] one of the most promising appears to be the intramuscular injection of penicillin-beeswax-peanut oil mixtures. First described by Romansky and Rittman,[2] this method is an adaptation of the technic of Code and his associates,[3] who obtained extended prolongation of the action of histamine, desoxycorticosterone acetate and heparin by mixing them with various oils and beeswax. In the original communications of Romansky and Rittman [2] it was noted that assayable levels of penicillin could be maintained in the blood stream for seven to ten hours following single intramuscular injections of penicillin-beeswax-peanut oil mixtures. Favorable clinical results have since been reported in the treatment of gonococcic urethritis [4] and pneumococcic pneumonia.[5]

During the past nine months mixtures containing various concentrations of penicillin, beeswax and peanut oil have been prepared and investigated in this hospital to determine which would produce the greatest prolongation of assayable blood levels and the most favorable clinical results. Detailed descriptions of these studies, which form the background for the present report, will be presented elsewhere.[6]

Factors of importance in the preparation of penicillin-beeswax-peanut oil mixture may be mentioned briefly. The peanut oil and beeswax should be of the highest purity; totally unsatisfactory mixtures have resulted from the use of peanut oil with a high moisture content.[7] With the original handshaken mixtures of Romansky and Rittman, calcium penicillin was considered superior to the sodium salt because it was less hygroscopic and produced finer suspensions. However, the somewhat greater attraction of sodium penicillin for water has been found to be of no consequence if the peanut oil and beeswax are added quickly to the dried powder, and it has been further found that, if a mechanical blender is used for mixing, equally fine suspensions can be obtained with both sodium and calcium penicillin.[7] No significant differences in the duration of blood levels or in clinical results have been found between the sodium and calcium salts when the mixtures were prepared in this manner.[8] Concentrations of beeswax varying from 4 to 12 per cent produced essentially the same degree of prolongation of assayable blood levels, but the lower concentrations may be considered preferable since mixtures containing only 4 to 6 per cent beeswax are less viscid and contain smaller amounts of foreign material.[7] It has been recently pointed out by Romansky that the higher the concentration of penicillin per unit volume the greater the prolongation of measurable blood levels.[9]

Penicillin-beeswax-peanut oil mixtures are now being prepared by several commercial companies for experimental study and will soon be available for general use. One such preparation containing 4.8 per cent beeswax and 300,000 units of calcium penicillin per cubic centimeter is under investigation in this hospital at the present time. Our purpose in this report is to present data concerning the absorption and excretion of penicillin following the administration of this preparation to patients with syphilis and with acute gonococcic urethritis. The relation of these observations to dosage and mode of administration of penicillin-beeswax-peanut oil mixtures for therapy will be considered.

METHODS AND MATERIALS

The penicillin-beeswax-peanut oil mixture was very viscid, even after being warmed in the incubator (37 C.) for thirty to sixty minutes. Into a 5 cc. Luer-Lok syringe 1.15 cc. was withdrawn, the extra 0.15 cc. being added to allow for the amount lost in the needle during injection. A number 20 gage needle, 1½ inches in length, was used for the actual injection, and considerable pressure was required on the plunger to force the thick material into the tissues. Injections were made into the gluteal or deltoid muscles and into the subcutaneous tissue overlying the insertion of the deltoid muscle.

Seventy-nine men with gonococcic urethritis received single intramuscular or subcutaneous injections of 300,000 units (1 cc.) of the penicillin-beeswax-peanut oil mixture. Blood was obtained for assay one-half, one, four, eight, twelve, sixteen, twenty, twenty-four and twenty-eight hours after the injection, and urine was collected in twelve hour periods for from forty-eight to seventy-two hours. Follow-up clinical observations and urine cultures were performed at intervals for a minimum of twenty-one days.

Thirty-five men with primary or secondary syphilis received 300,000 units (1 cc.) of the mixture once daily

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Dr. Rammelkamp is a member of the Commission on Acute Respiratory Diseases, Board for the Investigation and Control of Influenza and Other Epidemic Diseases in the Army, Preventive Medicine Service, Office of the Surgeon General, United States Army, Washington, D. C.

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5. Kinsman, J. M.; Daniels, W. B.; Cohen, S.; McCracken, J. P.; D'Alonzo, C. A.; Martin, S. P., and Kirby, W. M. M.: The Treatment of Pneumonia with Sulfonamides and Penicillin, J. A. M. A. **128:** 1219 (Aug. 25) 1945.

6. Kinsman and others.[5] Martin and others.[7] Leifer and others.[10]

7. Martin, S. P.; Kirby, W. M. M., and Leifer, W.: Absorption and Excretion of Penicillin Following Intramuscular Injections of Penicillin-Beeswax-Peanut Oil Mixtures, to be published.

8. Leifer and others.[10] Martin and others.[7]

9. Romansky, M. J.: Personal communication to the authors.

for eight injections, a total of 2,400,000 units in eight days. Blood was obtained for assay twenty-four hours after each injection, just prior to the next injection.

Penicillin assays were performed by the Kirby-Rantz modification of the Rammelkamp serial dilution technic.[10] Since there are differences in the standardization of various assay procedures,[11] it may be stated that growth of the hemolytic streptococcus (number 98) used for the present tests was completely inhibited by 0.02 unit of penicillin per cubic centimeter. By this method the smallest amount of penicillin measurable in the blood serum (0.5 cc. of undiluted serum plus 0.5 cc. of inoculum containing 1,000 to 5,000 organisms per cubic centimeter) was 0.04 unit per cubic centimeter. This value, 0.04 unit per cubic centimeter, represents the smallest concentration of penicillin measurable in the blood by any of the methods available at present, although with other methods of standardization it may be referred to as 0.02 unit per cubic centimeter or even as a "trace" of penicillin.

TOXICITY

Moderate soreness was noted at the site of injection in almost every instance for from twenty-four to forty-eight hours and was less severe following subcutaneous than following intramuscular injections. Except that it persisted for nine or ten days, the local discomfort was no more severe in the patients receiving multiple injections than in those who received a single treatment. Aside from the local soreness the only toxic manifestation noted was generalized urticaria, which appeared three days after the completion of treatment in two and four days after treatment in 1 of the 35 patients treated for syphilis. It is especially to be noted that with the subcutaneous route no induration, nodule formation or sterile abscesses occurred.

RESULTS

Intramuscular Route.—Results of assays of the blood in 54 patients with acute gonococcic urethritis treated with single intramuscular injections of the penicillin-beeswax-peanut oil mixture are presented in table 1. For convenience, the cases are arranged according to the total duration of assayable levels in the blood serum.

The most striking observation was the variability in absorption of penicillin from the muscle, as reflected by the presence of penicillin in the blood stream. The duration of assayable levels varied from four to twenty-eight hours. In 1 patient the duration was four hours, and in another penicillin was present in measurable quantities on only one occasion, at sixteen hours. In 14 (26 per cent) of the patients an assayable level was present for eight hours and in 22 (41 per cent) for twelve hours. In 37, or 69 per cent, of the patients, then, assayable levels of penicillin were obtained for no longer than twelve hours.

Of the other 17 patients, 6 had measurable concentrations for sixteen hours, 8 for twenty hours, 2 for twenty-four hours and 1 for twenty-eight hours. In 9 of the 17, however, there were one or more occasions on which assayable levels were not present. In case 47, for example, assayable levels were present at one-half, one, four, eight and twenty hours but not at twelve and sixteen hours. Of the 8 cases with levels persisting for twenty hours, 4 showed this irregularity, and of the 3 persisting for more than twenty hours it was present in every instance. By contrast, in the patients in whom penicillin was present in the blood for only twelve hours this irregularity occurred only once (patient 32). Of the whole series of 54 patients, the irregularity was present in 10, or 18.5 per cent.

The explanation of this irregularity of absorption is not clear, but it was thought that it might be related to muscular activity of the patient. It seemed possible that an absence of measurable levels at twelve and sixteen hours might occur while the patient was in bed asleep and that muscular activity during the daytime might cause enough gentle massage at the local site to produce measurable levels at eight hours and again at twenty hours. Consequently the data were analyzed from this standpoint. In all 54 patients the injections were made at 9 a. m., and the patients went to bed after the twelve hour blood was obtained. The irregularity, i. e., an absence of penicillin on one or more occasions followed by a measurable level, occurred in

TABLE 1.—*Assays of the Blood (Units per Cubic Centimeter of Penicillin) in Fifty-Four Patients Following Single Intramuscular Injections of 300,000 Units (1 Cc.) of the Penicillin-Beeswax-Peanut Oil Mixture*

Case Number	Site (Buttock or Deltoid)	Hours									Total Duration
		½	1	4	8	12	16	20	24	28	
1	B	0.2	0.2	0.7	0	0	0	0	0	0	4
2	B	0.7	0.07	1.0	0.07	0	0	0	0	0	8
3	B	...	0.4	0.7	0.1	0	0	0	0	0	8
4	B	0.2	0.1	0.4	0.04	0	0	0	0	0	8
5	B	0.2	0.7	0.4	0.4	0	0	0	0	0	8
6	B	0.2	0.4	1.0	0.4	0	0	0	0	0	8
7	B	0.1	0.1	0.7	0.5	0	0	0	0	0	8
8	B	0.4	0.2	0.2	0.2	0	0	0	0	0	8
9	B	0.7	0.7	1.0	0.7	0	0	0	0	0	8
10	B	0.4	0.7	0.7	0.2	0	0	0	0	0	8
11	B	...	0.5	0.5	0.07	0	0	0	0	0	8
12	B	0.4	0.4	0.7	0.07	0	0	0	0	0	8
13	B	0.5	0.7	0.7	0.07	0	0	0	0	0	8
14	D	1.0	0.7	0.5	0.07	0	0	0	0	0	8
15	D	0.5	0.7	1.0	0.7	0	0	0	0	0	8
16	B	0.2	0.1	0.04	0.2	0.05	0	0	0	0	12
17	B	0.1	0.07	0.5	0.1	0.1	0	0	0	0	12
18	B	0.07	0.1	0.2	0.5	0.2	0	0	0	0	12
19	B	0.2	0.2	0.7	0.2	0.2	0	0	0	0	12
20	B	0.1	0.2	0.1	0.1	0.2	0	0	0	0	12
21	B	0.2	0.2	0.1	0.2	0.1	0	0	0	0	12
22	B	...	0.1	0.1	0.4	0.2	0	0	0	0	12
23	B	0.7	1.0	1.0	0.04	0.1	0	0	0	0	12
24	B	0.1	0.2	1.0	0.4	0.1	0	0	0	0	12
25	B	0.5	0.5	0.5	0.2	0.07	0	0	0	0	12
26	B	0.4	0.7	1.0	0.2	0.04	0	0	0	0	12
27	B	0.5	0.7	0.2	0.07	0.07	0	0	0	0	12
28	B	0.4	0.4	0.5	0.2	0.1	0	0	0	0	12
29	B	0.5	0.7	1.0	1.0	0.2	0	0	0	0	12
30	D	0.4	0.2	0.7	0.1	0.04	0	0	0	0	12
31	D	0.2	0.5	0.5	0.2	0.2	0	0	0	0	12
32	D	2.0	1.0	0.2	0	1.0	0	0	0	0	12
33	D	0.7	1.0	0.1	1.0	0.07	0	0	0	0	12
34	D	0.5	0.4	0.5	0.2	0.1	0	0	0	0	12
35	D	...	1.0	1.0	0.2	0.2	0	0	0	0	12
36	D	0.2	0.2	0.4	0.2	0.1	0	0	0	0	12
37	D	0.2	0.5	0.5	0.2	0.1	0	0	0	0	12
38	B	0	0	0	0	0	0.04	0	0	0	16
39	B	0.2	0.1	0.2	0.7	0.1	0.05	0	0	0	16
40	B	0.2	0.2	0.2	0.2	0.1	0.04	0	0	0	16
41	B	0.07	0.1	0.04	0.1	0.2	0.07	0	0	0	16
42	B	...	0.2	0	1.0	0	0.1	0	0	0	16
43	D	0.07	0.2	0.2	0.2	0.1	0.2	0	0	0	16
44	B	0.07	0.07	0.05	0.1	0.1	0.05	0.07	0	..	20
45	B	0.1	0.07	0.2	0.4	0.07	0.05	0.04	0	..	20
46	B	0.2	0.2	0.1	0.2	0.07	0.2	0.07	0	0	20
47	B	0.2	0.2	0.1	0.2	0	0	0.04	0	0	20
48	B	0.2	0.4	0.7	0.2	0.1	0.04	0.04	0	0	20
49	B	0.2	0.2	0.2	0.1	0	0	0.07	0	0	20
50	D	0.7	0.7	0.5	0.2	0.07	0	0.2	0	0	20
51	D	0.2	0.2	0.2	0.2	0.1	0	0.1	0	0	20
52	B	0.04	0.07	0.2	0.1	0	0.04	0.2	0.05	0	24
53	B	0.04	0.05	0.2	0.2	0	0	0	0.1	0	24
54	B	0.04	0.2	0	0.2	0.07	0	0	0	0.1	28

10. Kirby, W. M. M., and Rantz, L. A.: Methods of Measuring Penicillin Concentrations in Body Fluids, J. Bact. **48**: 603 (Nov.) 1944.
11. Kirby, W. M. M., and Martin, S. P.: Technical Methods and Errors in Penicillin Assays of Body Fluids, to be published.

10 patients on twenty occasions, as follows: one occurred one-half hour after the injection, one at one hour, one at four hours, two at eight hours, six at twelve hours, six at sixteen hours, two at twenty hours and one at twenty-four hours. Thus, an absence of assayable levels occurred with roughly equal frequency during the day-time and at night. Another factor to be considered is that a fairly large portion of the penicillin injected was absorbed during the first twelve hours and that therefore absorption of the relatively small amount of penicillin remaining in the depot in the tissues could be expected to occur much more irregularly during the second twelve hours. To settle finally the influence of activity it will be necessary to study a group of patients in which the mixture is injected shortly before bedtime and to determine the frequency of irregularity during the night and the next day.

TABLE 2.—*Urinary Excretion of Penicillin (Units × 1,000) Following Single Intramuscular Injections of 300,000 Units (1 Cc.) of the Penicillin-Beeswax-Peanut Oil Mixture*

	Hours						
Case Number	12	24	36	48	60	72	Total
3	68	16	9	0.9	...	...	93.9
4	58	12	2	0.5	...	...	72.5
5	140	8	1	0.9	...	...	149.9
17	102	11	3	0.5	...	...	116.5
18	113	26	2	1.0	...	...	142.0
19	64	12	5	0.3	...	...	81.3
39	70	10	3	0.5	...	...	83.5
40	38	22	7	1.0	...	...	68.0
52	54	79	9	0.9	...	...	142.9
54	66	14	10	0.5	...	...	90.5
2	73	28	7	1.0	0.3	0.1	109.4
20	84	28	6	1.0	0.4	0.1	119.5
33	69	22	6	0.9	0.6	0.3	98.8
35	93	19	9	1.0	0.4	0.4	122.8
53	60	21	3	0.7	0.5	0.1	85.3

TABLE 3.—*Assays of Blood (Units of Penicillin per Cubic Centimeter) Obtained Twenty-Four Hours After Each Intramuscular Injection of 300,000 Units (1 Cc.) of the Penicillin-Beeswax-Peanut Oil Mixture in Patients Who Received 300,000 Units Daily for Eight Days*

Thirty-five patients were studied, but only the 15 in whom measurable concentrations of penicillin were present on one or more occasions are included in the table.

	Days							
Case Number	1	2	3	4	5	6	7	8
1	0	0	0	0	0	0.1	0	0
3	0	0	0	0	0.07	0	0	0
4	0	0	0.07	0.05	0	0	0	0
5	0	0	0.05	0	0	0	0.04	0
7	0	0	2.0	0	0	0	0	0
11	0	0	0.1	0	0	0	0	0.1
14	0	0	0	0	0	0	0	0.04
15	0	0.07	0	0	0	0	0	0
22	0	0	0	0.07	0.05	0	0	0
23	0	0	0	0	0	0	0.07	0
24	0	0	0	0	0	0	0.2	0
25	0	0	0.1	0	0	0	0	0
26	0	0.2	0	0	0	0	0	0
32	0	0	0	2.0	0	0	0	0
33	0	0.05	0.1	0	0	0	0	0

In 13 of the 54 patients in whom the mixture was injected into the deltoid muscle there was no greater prolongation of action, and variability was as frequent as in those who received treatment in the gluteal muscles. Only 3 had measurable levels for more than twelve hours, and in 3 there was an absence of detectable quantities of penicillin on one or more occasions.

The height of the blood concentrations varied from 0.04 to 2.0 units per cubic centimeter. Of a total of 256 levels, 208, or 81.2 per cent, were 0.10 unit per cubic centimeter or higher, and the remainder, forty-eight, or 18.8 per cent, varied from 0.04 to 0.1 unit per cubic centimeter.

Urinary excretion of penicillin in 15 of the 54 patients is presented in table 2. The amount recovered in from forty-eight to seventy-two hours varied from 68,000 to 150,000 units. During the first twelve hours excretion varied from 54,000 to 140,000 units and during the second twelve hours from 8,000 to 79,000 units. The amounts excreted after twenty-four hours were small, declining to only a few hundred units from the sixtieth to the seventy-second hour.

In 35 patients treated for syphilis with eight daily intramuscular injections of 1 cc. (300,000 units) of the mixture, blood was obtained for assay twenty-four hours after each injection on 275 occasions. Of these, assayable levels were present in 20 specimens, or approximately 7 per cent of the total. The results in the patients in whom measurable levels were present are shown in table 3. Penicillin was not found in the blood any more frequently as treatment progressed; i. e., there was no evidence of significant cumulation. This is further borne out by the close agreement of the 7 per cent of twenty-four hour levels among the syphilitic patients, and the 5.5 per cent (3 of 54 patients) noted in the patients who received a single intramuscular injection for the treatment of gonococcic urethritis.

TABLE 4.—*Assays of the Blood (Units per Cubic Centimeter of Penicillin) in Twenty-Five Patients Following Single Subcutaneous Injections of 300,000 Units (1 Cc.) of the Penicillin-Beeswax-Peanut Oil Mixture*

	Hours									
Case Number	½	1	4	8	12	16	20	24	28	Total Duration
1	0.04	0.1	0.2	0.1	0.07	0.1	0	0	0	16
2	0.2	0.4	2.0	0.1	0.07	0.07	0	0	0	16
3	0.4	0.4	0.7	0.1	0.1	0.04	0	0	0	16
4	0.1	0.2	0.2	0.2	0.1	0.1	0	0	0	16
5	0.2	2.0	0.2	0.1	0	0.04	0	0	0	16
6	0.5	0.5	0.2	0.2	0.07	0.2	0	0	0	16
7	0.05	0	0	0.05	0	0.2	0	0	0	16
8	0.05	0.1	0.2	0.2	0.1	0.5	0	0	0	16
9	0.07	0.2	0.2	0.1	0.1	0.07	0	0	0	16
10	0.2	0.2	0.2	0.2	0	0.05	0.2	0	0	20
11	0.2	0.5	0.2	0.2	0.1	0	0.04	0	0	20
12	0.2	0.5	0.5	0.2	0	0.04	0.2	0	0	20
13	1.0	0.2	0.2	0.4	0	1.0	0.05	0	0	20
14	0.1	0.5	0.1	0.07	0	0.1	0.07	0	0	20
15	0.1	0.2	0.2	0.2	0.4	0.4	0.07	0	0	20
16	0.1	0.07	0.1	0.2	0.1	0.1	0.1	0	0	20
17	0.2	0.2	0.2	0.1	0.07	0.1	0.05	0	0	20
18	0.1	0.2	0.1	0.4	0.2	0.07	0.07	0	0	20
19	0.1	0.07	0.05	0.2	0.2	0.2	0.1	0.1	0	24
20	0.1	0.1	0.1	0.07	0	0.05	0.07	0.04	0	24
21	0.05	0.1	0.4	0.1	0.1	0.2	0.05	0.1	0	24
22	0.07	0.2	0.2	0.1	0.07	0	0.1	0.1	0	24
23	0.5	0.5	1.0	0.7	0.2	0	0	0	0.7	28
24	0.2	0.2	0.04	0.1	0	0.07	0	0	0.2	28
25	0.1	0.2	0.5	0.2	0	0.1	0	0.1	0.07	28

SUBCUTANEOUS ROUTE

Results of assays of the blood serum in 25 patients who received 1 cc. of the mixture subcutaneously are presented in table 4. Prolongation of measurable concentrations of penicillin in the serum was much more satisfactory than with the intramuscular injections. In every instance penicillin was detected in the blood for at least sixteen hours, and in 16, or 64 per cent, of the cases assayable levels were present for twenty hours or more. Of 156 levels 119, or 76.3 per cent,

were 0.1 unit per cubic centimeter or higher, and of the remainder 37, or 23.7 per cent, varied from 0.04 to 0.1 unit per cubic centimeter. As with the intramuscular injections, instances in which penicillin could not be detected occurred frequently. The urinary excretion confirmed the evidence of superiority of the

TABLE 5.—*Urinary Excretion of Penicillin (Units × 1,000) Following Single Subcutaneous Injections of 300,000 Units (1 Cc.) of the Penicillin-Beswax-Peanut Oil Mixture*

Case Number	Hours				Total
	12	24	36	48	
6	60	41	12	2	115
11	78	62	9	1	150
17	59	57	16	2	134
21	48	58	5	2	113
24	64	62	8	1	135

subcutaneous over the intramuscular route (table 5). Less penicillin, on the average, was excreted during the first twelve hours and more during the second twelve hours following subcutaneous injections.

Typical curves of blood and urinary levels with 300,000 units of penicillin in saline solution (37,500 units every three hours, for eight doses), and with 300,000 units (1 cc.) of the penicillin-beeswax-peanut oil mixture injected intramuscularly and subcutaneously, are presented in the chart for purposes of comparison.

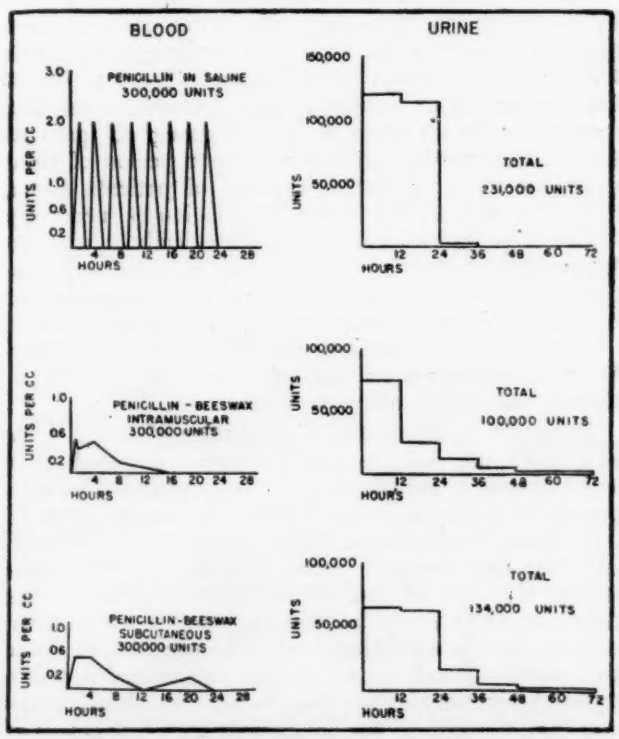
COMMENT

The present studies indicate that penicillin-beeswax-peanut oil mixtures provide an effective and safe method of prolonging the action of penicillin in the body. Aside from soreness at the site of injection, the only toxic manifestation noted was generalized urticaria, which occurred in 3 of the 40 patients treated for early syphilis with eight daily injections. It is not known as yet whether these reactions represent a sensitivity to beeswax, peanut oil or penicillin.

One of the most striking observations was the variability of absorption and excretion of penicillin following intramuscular injections of the penicillin-beeswax-peanut oil mixture. The location of the injected material in relation to the muscle tissue and fascial planes was probably the most important single factor responsible for this variability. When surrounded by highly vascular muscle tissue, release of penicillin from the oily, waxy mixture occurs rapidly, whereas when it is located between the relatively avascular fascial spaces absorption is slow and irregular. Since the mixture was probably never located in exactly the same place in different patients, it is not surprising that variability should occur. Of importance in this connection is the fact that in order to maintain minimal assayable concentrations of penicillin in the blood stream there must be continuous absorption from the muscle of a relatively large amount of penicillin (at least 2,500 units per hour).[12] Other factors, such as the activity of the patient (sleeping or walking) and the muscle employed (deltoid or gluteal) seemed to have little effect on the rate of absorption. The factor of activity needs further study, however, especially from the standpoint of administering the injection in the evening rather than in the morning.

12. Rantz, L. A., and Kirby, W. M. M.: The Absorption and Excretion of Penicillin Following Continuous Intravenous and Subcutaneous Administration, J. Clin. Investigation **23**: 789 (Sept.) 1944.

Ideally, it should be possible to administer a whole day's supply of penicillin in a single injection of a beeswax-peanut oil mixture, with the maintenance of effective therapeutic concentrations in the blood stream for a period of twenty-four hours. Unfortunately, it is evident from the present studies that this is not possible with 300,000 units, and from this standpoint the injection of the mixture is a relatively inefficient method of administration. As indicated in the chart, a single intramuscular injection of 300,000 units of penicillin in beeswax-peanut oil produces in most instances a measurable level of penicillin for only twelve hours, whereas with 300,000 units of penicillin in saline solution given in divided doses of 37,500 units every three hours assayable levels are maintained almost continuously for a period of twenty-four hours. This relative inefficiency is partly due to the fact that with the mixtures penicillin is gradually absorbed from the depot in the muscle for a period of several days. After twenty-four hours, however, and indeed in most instances after twelve hours, the amounts which appear in the urine are too small to be indicative of the presence of therapeutic concentrations in the blood and tissues. Even when the mixtures are injected daily for several days, the amounts of penicillin being slowly absorbed from several depots are too small to produce a significant cumulative action. This was well illustrated in the patients with syphilis, in whom assayable levels were present no more frequently following several doses than after a single injection.



Typical blood levels and urinary excretion in patients receiving 300,000 units of penicillin in saline solution (37,500 units every three hours for eight doses) and with 300,000 units (1 cc.) of the penicillin-beeswax-peanut oil mixture injected intramuscularly and subcutaneously.

Evaluation of these results in terms of clinical therapy is difficult, since the amount of penicillin necessary to bring about a cure in various types of infections is not definitely established. It would appear, however, that since the penicillin-beeswax-peanut oil mixture under investigation produced assayable concentrations of penicillin for only twelve hours in most instances, intra-

muscular injections of the mixture should be made twice a day for the treatment of infections in which it is desirable to maintain therapeutic concentrations of penicillin throughout the duration of therapy. Examples are severe infections with bacteremia, especially those caused by staphylococci; subacute bacterial endocarditis, and possibly syphilis. The necessity of injecting 600,000 units of penicillin to obtain assayable levels in the blood stream for twenty-four hours again emphasizes the fact that the convenience of fewer injections is achieved only at the sacrifice of fairly large amounts of penicillin. This is further borne out by the fact that 300,000 units of penicillin in saline solution given in a twenty-four hour period (37,500 units every three hours) is a larger dose than is usually administered even in the treatment of the most severe infections.

Clinical results so far obtained are in agreement with the evidence indicating that larger amounts of penicillin are necessary when penicillin-beeswax-peanut oil mixtures are employed. Relapses have been noted in cases of pneumococcic pneumonia treated with 400,000 units of penicillin in beeswax-peanut oil (100,000 units daily), while in a control series no failures occurred with a total dose of only 120,000 units of penicillin in saline solution given in divided doses.[5] In gonococcic urethritis a single injection of 300,000 units of penicillin-beeswax-peanut oil produced results no better than those obtained with 100,000 units of penicillin in saline solution (20,000 units every three hours for five doses).[13] In the present study, three failures have occurred among 40 patients with gonococcic urethritis followed clinically and bacteriologically for a period of twenty-one days. Similarly, two mucocutaneous and serologic relapses have occurred among 35 patients treated for syphilis and followed for a period of eight weeks or more. A larger number of patients and a longer period of follow-up are obviously necessary before these figures will become statistically significant. In general, however, it appears that in order to obtain the best results in severe infections with intramuscular injections of penicillin-beeswax-peanut oil mixtures it is desirable to administer 300,000 units twice daily. With milder infections one injection a day will probably be adequate in many instances.

From the standpoint of prolongation of blood levels and uniformity of absorption, results obtained after subcutaneous administration of the penicillin-beeswax-peanut oil mixture were superior to those following intramuscular injections. The mixture was injected into the subcutaneous tissue directly over the tendinous insertion of the deltoid muscle, since at this point the possibility of introducing some of the material into the muscle was minimized. The presence of fewer and smaller blood vessels in the subcutaneous tissue probably accounts for the slower, more uniform absorption from this site. Since in approximately two thirds of the patients penicillin was present in the blood for a period of twenty hours or more, the likelihood of a single injection daily being adequate for most infections would appear to be much greater than with intramuscular injections. The subcutaneous route has been employed in only 25 cases, and the period of follow-up has not been completed; therefore, clinical results are not yet available.

13. Leifer, W.; Martin, S. P., and Kirby, W. M. M.: The Treatment of Gonococcic Urethritis with Single Injections of Penicillin-Beeswax-Peanut Oil Mixtures, New England J. Med., to be published.

SUMMARY AND CONCLUSIONS

1. The absorption and excretion of penicillin was studied following 359 intramuscular and subcutaneous injections of a commercially prepared penicillin-beeswax-peanut oil mixture containing 4.8 per cent beeswax and 300,000 units of penicillin per cubic centimeter.

2. There was wide variability of absorption and excretion of penicillin. In 54 patients with acute gonococcic urethritis who received single intramuscular injections of 300,000 units (1 cc.) of the mixture the total duration of assayable levels of penicillin in the blood stream varied from four to twenty-eight hours. In 37 (69 per cent) of the patients, levels were present for no longer than twelve hours, and in the other 17 (31 per cent), in whom levels were present for sixteen to twenty-eight hours, irregularity of absorption during the second twelve hours was noted in 9; i. e., there were one or more occasions on which assayable levels were not present.

3. Excretion of penicillin in the urine declined rapidly after the first twelve hours, but small amounts could be detected for seventy-two hours or more.

4. In 35 patients treated for syphilis with intramuscular injections of 300,000 units (1 cc.) of the mixture daily for eight days, assayable levels of penicillin were present twenty-four hours after each injection on 20 of 275 occasions, or approximately 7 per cent. There was no evidence of significant cumulation; i. e., assayable levels were present at twenty-four hours no more frequently following several doses than after a single injection.

5. Results with subcutaneous administration in 25 patients were superior to those following intramuscular injections, both in uniformity of absorption and in prolongation of blood levels. In approximately two thirds of the patients penicillin was present in the blood in detectable quantities for twenty hours or more.

6. From the preliminary clinical results it is concluded that, although larger amounts of penicillin are required than with penicillin in saline solution, penicillin-beeswax-peanut oil mixtures provide an effective and apparently safe method of prolonging the action of penicillin in the body.

ADDENDUM.—Since the completion of this manuscript it has been found that in most patients assayable levels of penicillin are present in the blood for twenty-four hours or more following single subcutaneous injections of 600,000 units (2 cc.) of the penicillin-beeswax-peanut oil mixture.

Inebriety and Crime.—An investigation was undertaken of 3,135 offenders committed to Sing Sing Prison in the two year period 1938 to 1940. The prisoners were classified as inebriates and noninebriates. The classification "inebriate" was based on statements by impartial observers, or admissions to a general hospital for an alcoholic disease, or admission to a state hospital for an alcoholic mental disorder. Of 3,135 prisoners 697, or 22 per cent, were found to be inebriates. In the first year of the period the proportion of inebriates was around 24 per cent and in the second year around 21 per cent. Allowing for random variations, one may say roughly that in a prison population such as that of Sing Sing the incidence of inebriety would be around 25 per cent. On the basis of proper standards one thus arrives at a much lower estimate of 60 per cent based on the indiscriminate use of data.—Banay, Ralph S., in Alcohol, Science and Society, New Haven, Quarterly Journal of Studies on Alcohol, 1945.

Special Article

MEDICAL CARE FOR THE AMERICAN PEOPLE

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We are concerned with a problem on which there are sharp differences of opinion. In fact, were there not these differences of opinion there would be no problem.

As to the ultimate aim we are all agreed. I believe no one can quarrel with the platform of the American Medical Association, adopted in June 1944, which calls for "availability of medical care of a high quality to every person in the United States." The differences of opinion arise as to how this aim is to be achieved.

As doctors we see the problem in a way no one else can possibly see it. It pertains to our daily work and we are naturally closer to it than any one else. One does not consult a doctor if one wishes to draw up a will. One goes to a lawyer. Neither does one consult a lawyer if one wishes to build a house. One goes to an architect. Yet there are many who think it is not necessary to consult the doctors on any problems related to medical care but that legislators, those engaged in social welfare and other laymen can draw up a complete program, have it adopted and then expect the doctors to make it work. It should be borne in mind that, no matter what system is eventually evolved in this country for delivering medical care, the doctor is the one who is going to have to deliver it. It cannot possibly be delivered by a "social uplifter." Hence it would be better for all concerned if the plan adopted is one which will enlist the cooperation and enthusiasm of the medical profession.

Another point usually lost sight of is that the mere delivery of a quantity of medical care is not solving the problem. The homeopathic precept that the more a thing is diluted the greater its effectiveness went into the discard long ago. What we want is not just more medical care but more medical care of a high quality.

The answer to any complex problem is usually not simple but also complex. So, in our problem of medical care, the answer is not a single one but a multiple one. Yet the Social Security Board and Senators Wagner and Murray and Congressman Dingell refuse to admit there is any possible answer but the single one of a national compulsory sickness insurance, regardless of the fact that nowhere has it been as satisfactory as our own system of private medical care.

A careful analysis of the situation would seem to indicate that there are certain elemental factors which are responsible for our problem. These factors are (1) improper distribution of doctors, (2) lack of proper diagnostic facilities in certain areas, (3) the costs of illness—particularly so-called catastrophic illness—and (4) a general economic factor. These factors are closely related and cannot be considered separately. Why are certain areas devoid or short of doctors? There are two reasons. One is that certain areas are so sparsely settled that there is no attraction for a doctor, not only because he will have insufficient patients, but because there are no educational or social facilities for him to bring up his children. The other is really the second factor (namely, the lack of proper diagnostic facilities) so that he cannot practice good medicine. In the latter case he either leaves and goes elsewhere or else he does what to my mind is worse, he stays and practices poor medicine. With further reference to the lack of diagnostic facilities, this lack is usually because the community by itself cannot support the necessary facilities.

The third factor, the costs of illness, again is tied up partially with the second: availability or nonavailability of proper diagnostic facilities. The high cost of illness is not in ordinary intercurrent illness but in the cost of diagnosis in the more complicated illnesses, in hospitalization and in private nursing care. Also in sparsely settled areas in long distances a doctor may have to go increase the cost of his services. Still another important reason is the cost of care of the chronic invalid.

The fourth factor—the general economic one—is the matter of housing, clothing, nutrition and sanitation. This is a social problem of the community and not a medical problem, although the neglect of it results in an increase in the prevalence of disease and the necessity for medical care. The solution, however, is not the pouring in of medical care but preventing the necessity for it.

With this as a general background, let us now see how the American Medical Association proposes to solve this problem. On June 22, 1945 the Board of Trustees and the Council on Medical Service and Public Relations of the Association adopted jointly a fourteen point constructive Program for Medical Care.

This program is as follows:

Preamble

The physicians of the United States are interested in extending to all people in all communities the best possible medical care. The Constitution of the United States, the Bill of Rights and the "American Way of Life" are diametrically opposed to regimentation or any form of totalitarianism. According to available evidence in surveys, most of the American people are not interested in testing in the United States experiments in medical care which have already failed in regimented countries.

The physicians of the United States, through the American Medical Association, have stressed repeatedly the necessity for extending to all corners of this great country the availability of aids for diagnosis and treatment, so that dependency will be minimized and independence will be stimulated. American private enterprise has won and is winning the greatest war in the world's history. Private enterprise and initiative manifested through research may conquer cancer, arthritis and other as yet unconquered scourges of humankind. Science, as history well demonstrates, prospers best when free and unshackeled.

Program

The physicians represented by the American Medical Association propose the following constructive program for the extension of improved health and medical care to all the people:

1. Sustained production leading to better living conditions with improved housing, nutrition and sanitation, which are fundamental to good health; we support progressive action toward achieving these objectives.

In this connection the American Medical Association has previously stated that "it is not in the public interest that the removal of economic barriers to medical science should be utilized as a subterfuge to overturn the whole order of medical practice. Removal of economic barriers should be an object in itself." To illustrate this point, there appeared in a popular magazine a few years ago a drawing showing a woman in a state of malnutri-

This paper, except for the paragraphs devoted to the implementation of the program, was presented before the Jackson County Health Forum, Kansas City, Mo., on Oct. 17, 1945. The interpretations of the program were endorsed by the Council on Medical Service and Public Relations on October 18. The methods of implementation of the program were drafted and approved at the Conference on Public Relations held at Chicago on October 19 and 20.

tion, clad in rags, surrounded by children also undernourished, likewise clad in rags, standing before a hovel. The picture had as its topic "These people need medical care." Of course they needed medical care, but had they been properly housed, fed and clothed they probably would have needed very little. Yet this picture was used as propaganda to call for a new system of medical care, whereas the fault was not primarily medical but a social fault of their community.

Prevention of disease by inoculation and curing disease in its early stages are excellent, but it must be remembered that good living conditions, including good nutrition, housing and sanitation, are equally important. We have as a shining example of this the condition of some of our prisoners of war, who were released not only in a state of malnutrition but often afflicted with deficiency diseases such as beriberi, diseases influenced by overcrowding such as tuberculosis and diseases due to cold and damp such as arthritis and rheumatic conditions. Again, faulty sanitation may be the main factor in the spread of typhoid, overcrowding and lack of cleanliness in the spread of typhus. The mere provision of a quantity of medical care does not affect the cause of these diseases. The real cause is often economic and not medical.

The implementing of this first point must be by education of the public. There are constant attempts to overthrow the whole order of medical practice on the theory that the people in this low economic group have inadequate medical care, whereas the solution is in raising the economic level of these people.

Constant publicity is recommended on the facts of this particular problem through the American Medical Association, the state associations, the county societies and the women's auxiliaries, by addresses and articles not only in the medical journals but also in the lay press.

2. An extended program of disease prevention with the development or extension of organizations for public health service so that every part of our country will have such service, as rapidly as adequate personnel can be trained.

Not over half of the counties in the United States have a full time public health service. In some cases where a full time service does exist, it is subject to political control, there is no continuity in administration and an inefficient health department results. Now it would not be feasible for every county to have a full time health department of its own because of the expense. However, neighboring counties could form a district health department with a traveling health service and laboratory. The protection of the water, milk and food supplies, proper sewage disposal and mosquito and fly control will practically eliminate many diseases with not only no increase but an actual decrease in the amount of medical care necessary. To do this public support must be secured and in some instances funds from outside the community must be obtained. The medical profession has no objection to the use of federal funds where necessary to establish health departments but believes that the administration of these activities should be under local control, except as to meeting general high standards.

Training of public health officials is important, and when they are trained they should be adequately compensated. At present many public health officials do not receive the income of men engaged in private activities or often in other fields of government.

The implementing of this second point is by means of legislation. Such legislation should also be of interest to the American Public Health Association, the State and Territorial Health Officers Association and the U. S. Public Health Service. It is recommended that the American Medical Association sponsor a conference with these groups in an endeavor to enlist their cooperation in legislative efforts to accomplish the purpose of this item.

3. Increased hospitalization insurance on a voluntary basis.

4. The development in or extension to all localities of voluntary sickness insurance plans and provision for the extension of these plans to the needy under the principles already established by the American Medical Association.

5. The provision of hospitalization and medical care to the indigent by local authorities under voluntary hospital and sickness insurance plans.

These three may be considered together. At present over 19,000,000 people are insured under Blue Cross hospitalization plans and about an equal number are insured through their industries, although there are probably many duplications so that the total is not twice 19,000,000. This method has grown rapidly and tremendously and seems to meet the needs for hospitalization where it is in operation. It would seem, therefore, that extension of this insurance on a voluntary basis so that it is available to every one who desires it should be our aim and that every support should be given it.

Voluntary sickness plans now cover nearly 29,000,000 persons in the United States. The plans vary. Some are industrial, some are medical society sponsored and some are private insurance in commercial companies. The plans also vary as to coverage. Some give complete coverage and others give only partial coverage. Some cover only the employee and others his family as well.

Except for a few industrial plans, the idea is comparatively new. When it was started it was deemed best to begin on an experimental basis in small areas. No one knew what coverage should be given; there was no actuarial background and no one knew how either the public or the profession would react to it. Consequently, progress has been slow. Many plans were abandoned and others revised. Ideas are now crystallizing as to the best type of plan or, rather, plans, as no one plan seems to be suited to every area and every class. By that I mean that what will work in New York City will not necessarily work in Topeka, Kan. Rural and agricultural needs are different from metropolitan and industrial. However, certain elements in these plans may be workable nationally, and efforts are being made to establish national indemnity plans.

The American Medical Association would extend these voluntary plans and has approved the principle of so-called medical service plans for the medically indigent. To show how these matters progress, the original approval of voluntary medical insurance was on an indemnity basis only. Now both are approved so long as they follow certain principles.

The American Medical Association also has recommended the use of the voluntary insurance principle in the hospitalization as well as the medical care of the indigent. Public authorities could make use of these plans wherever they are available at a lower cost and with more efficient service than by extending institutions for the indigent or employing full time physicians to care for the indigent. Some of those who desire

compulsory sickness insurance say this cannot be done because the law does not permit it, but I note that they have no hesitation in urging changing of the law to permit compulsory sickness insurance, which the law does not permit now either.

Since there will be a special report on this subject, it is recommended that any decisions on this subject be integrated into the implementation of these three points of the program.

In addition, it is recommended that the medical care of veterans be integrated into these voluntary plans of hospitalization and medical care. This large group would help stabilize these plans and at the same time give the veterans free choice of physician and permit them to be cared for on a local basis without the necessity of vast extension of government institutions.

6. A survey of each state by qualified individuals and agencies to establish the need for additional medical care.

The scientific approach to the problem is to determine the needs first and then to treat specifically the needs that are so developed. It is important to have a survey in every state to find where the weakness lies—whether in the field of infant mortality, venereal disease, tuberculosis, lack of hospital beds, lack of diagnostic facilities or elsewhere—and then to take steps necessary to meet those needs.

These surveys should include every medical facility, not just certain ones, as no true picture can be obtained of any facility without considering the problem as a whole and with due reference to every factor.

These surveys should be made by the state agencies, public and private, with cooperation and approval of the state medical associations.

7. Federal aid to states where definite need is demonstrated, to be administered by the proper local agencies of the states involved with the help and advice of the medical profession.

The medical profession, under certain conditions, approves appropriations by Congress of funds for medical purposes. It feels, however, that in many instances states have sought aid and appropriations for such functions without any actual financial need on the part of the state, in order to secure such funds as might be available. Funds may be allotted when proof is given of the actual financial need by the state for prevention of disease, for promotion of health or for the care of the sick. Health is primarily a local responsibility. Physicians should be integrated into the control of all medical affairs, and the control of local projects should be local in character.

This likewise is a legislative matter and should be implemented by the American Medical Association again, in collaboration with the other agencies listed under item 2, together with the collaboration of the state medical associations.

8. Extension of information on these plans to all the people with recognition that such voluntary programs need not involve increased taxation.

One of the difficulties we encounter is that the people do not realize the vast amount of medical service now available. In every large city and in many counties and states there are extensive provisions for medical service, of which those entitled do not avail themselves. Education of the public as to what is available and how to obtain it is essential. The Medical Society of the State of New Jersey a few years ago broadcast to the public via the press, radio and public speakers that any person in the state of New Jersey who could not get medical care should immediately contact the state society. Out of the entire population of New Jersey only 7 persons applied, and in each of these 7 cases medical care was available. They simply did not know how to obtain it.

This is again a purely educational matter, and the implementation should be through the American Medical Association, the state associations, the county societies, the woman's auxiliary and the appropriate voluntary health agencies. The bulk of the information necessary is, of course, local and hence the educational activities must be necessarily largely local.

9. A continuous survey of all voluntary plans for hospitalization and illness to determine their adequacy in meeting needs and maintaining continuous improvement in quality of medical service.

Exactly as a preliminary survey is needed to determine the areas of need, so also must there be continuous surveys of the manner in which existing provisions meet existing needs in order to permit progress. There should be continuous evaluation of medical services so that they may be kept up to the best that can be provided.

We will now consider items 10, 11, 13 and 14 together, as they are related and pertain to the emergency, the result of the war:

10. Discharge of physicians from the armed services as rapidly as is consistent with the war effort in order to facilitate redistribution and relocation of physicians in areas needing physicians.

11. Increased availability of medical education to young men and women to provide a greater number of physicians for rural areas.

13. Adoption of federal legislation to provide for adjustments in draft regulation which will permit students to prepare for and continue the study of medicine.

14. Study of postwar medical personnel requirements with special reference to the needs of the veterans' hospitals, the regular army, navy and United States Public Health Service.

Some 60,000 physicians have entered the armed forces voluntarily to do their part in the war. Discharge of these physicians as rapidly as possible is essential, to relieve areas where there is an insufficient number of physicians to care for the civilian population and to facilitate redistribution and relocation of physicians in areas requiring them. The American Medical Association has established a Bureau of Information to determine such areas of need and to facilitate relocation of physicians.

The present draft regulations ignore the necessity of providing students for necessary premedical study. The United States is the only country that has not protected the training of individuals for medicine and other sciences. Unless steps are taken to remedy this situation there will be an increasing shortage of physicians in the near future. Any legislation for compulsory military service should recognize the need for maintaining continuous training in science and particularly in the science of medicine.

Item 14 ties in with this, as there will be a greatly increased call for physicians during the next few years to meet the needs of an increased regular army, regular navy, Veterans Bureau and occupied territory. Not only shall we need more physicians, but care must be taken to see that only the physicians actually necessary are taken into the services. There are many complaints that physicians in the services are in excess of what is required and that their professional skill is not properly utilized. This may have been necessary or unavoidable in war but certainly is not in peace.

Item 11 is closely related to the three preceding items. Medical schools have suffered during the war from a lack of properly qualified persons to take the courses. The removal of premedical students from the colleges by the Selective Service System is chiefly responsible. The American Medical Association advocates every possible effort toward filling the classes of the premedical students and toward expanding medical education to meet the needs of the nation. To attract physicians to rural areas there must be adequate diagnostic facilities, and in some cases subsidies may be necessary.

To implement these items, the American Medical Association should continue its close contact with the Army and Navy and continue urging that physicians be released as rapidly as possible and, further, that the existence and functions of the Bureau of Information be steadily advertised to the men in the services.

Pressure should also be continued on the responsible authorities by both the American Medical Association and the state medical associations to effect the recommended changes in the draft regulations, and if this fails legislation should be sponsored to bring about these changes.

With reference to item 11, this is in part related to the establishment of adequate diagnostic facilities so that there will be attractions for the physician in rural areas. While the training of more physicians is necessary, this is no surety that when they are trained they will settle in rural areas. The use of grants from the various funds or subsidies by the local communities will in some cases be necessary, in addition to the setting up of proper diagnostic facilities, if the problem is to be solved. The surveys recommended in items 8 and 9 should include the needs of rural areas as to additional physicians, and investigation should be made of the most feasible method of alleviating the shortages.

12. Postponement of consideration of revolutionary changes while 60,000 medical men are in the service voluntarily and while 12,000,000 men and women are in uniform to preserve the American democratic system of government.

This, of course, refers to legislation such as the Wagner-Murray-Dingell bill. Lest there be misunderstanding, let me state at the start that this does not mean that the American Medical Association is weakening in its stand against national compulsory sickness insurance. It merely means that, with such a large proportion of doctors and the public in service and unable to give their opinions, no such revolutionary change should even come up for discussion until all the people have an opportunity to express themselves.

We are unalterably opposed to the Wagner-Murray-Dingell bill for the following reasons: It is un-American; it is inordinately expensive, involving an 8 per cent pay roll tax up to $3,600 of income, and this probably inadequate. In fact, a recent economic survey indicates that with a national income of $120,000,000,000 a 15 to 17 per cent tax will be necessary and even this, perhaps, inadequate. It sets up another federal bureaucracy with a lay board—the Social Security Board—at its head, to decide all medical matters, and although the administrative head is the Surgeon General, who incidentally usually is, but need not by law be, a physician, nevertheless he is an appointive, not an elective, official and he is subject to the dictates of this lay board; a third party, namely the government, is brought between the doctor and the patient, and the doctor is responsible to that third party. The head of the government camel is thrust into the tent of medical education and medical research. While free choice of physician is provided for in the bill, this is a "come on," as it means free choice of the physician who will take part in the scheme. A poor type of medical care is encouraged—quantity without regard to quality. Inefficiency, red tape and political medicine will result. Should the bill be enacted, government control would cover not only doctors but eventually dentists, nurses, technicians, hospitals, medical and hospital supplies and equipment. Notwithstanding Senator Wagner's claim that this bill is not socialized medicine, it is just that. It is paternalistic and inevitably will lead to national socialism.

The *Saturday Evening Post* has the following to say: "One reason why the compulsory state seems to be gaining on us is defeatism among the vast majority who don't want any part of it. We have been told so often and so emphatically that collectivism is 'inevitable' that we have come to believe it, as if some strange bacterial growth were gnawing at our economic vitals and it was too late for an operation. Investigation of specific symptoms usually reveals that the only 'inevitable' feature of the march toward collectivism is the determination of the little group which wants to collectivise us."

The wording of this item is already somewhat obsolete, as there are no longer 60,000 physicians or 12,000,000 persons in the services. The number is dropping steadily. The purpose of this item originally, however, was to protect the rights of all Americans to express themselves on any revolutionary change affecting their daily lives.

It is recommended that the American Medical Association give notice that it has not only in the past, does now, but will in the future oppose any legislation which by its very nature engenders a poor type of medical care, encourages dependency or regiments either the patient or the physician.

We consider such legislation as compulsory sickness insurance, no matter how it may be dressed up, as reactionary. There have been attempts for over thirty years to bring about compulsory sickness insurance in some parts of this country and for several years nationally. All the bills introduced have the same basic faults. It is the same old specter with the addition of occasional new cosmetics in the hope that they will fool the public into thinking it is something new. It is an all or nothing program and is in the nature of a "shotgun prescription."

On the other hand, our program attacks the basic deficiencies, offers specific treatment for specific ills, is elastic and can be modified from time to time as conditions indicate.

CONCLUSION

It would be better to rearrange the order of the program so that it may be divided into four general aims.

I. Those primarily educational. This covers items 1 and 8, namely the removal of economic barriers so that a great deal of medical care will be unnecessary by eliminating its need; and extension of information to the people on services available.

In our educational program we particularly urge that state associations do their utmost to reactivate and revivify the county societies. The vast majority of these are poorly attended and the members are indifferent to the problems that beset us. No education of the public can be successful unless the profession also is fully educated.

II. Those primarily calling for positive legislation or administrative action by governmental agencies. This includes items 2, 6, 7, 9, 10, 11, 13 and 14; namely, extension of public health service for the prevention of disease; surveys to determine our needs, with these surveys continuous so that our remedies may keep pace with our necessities; the setting up of proper diagnostic facilities where lacking; federal aid where local communities cannot finance their necessary activities, but the activities to remain under local control; the readjustments in personnel requirements of the services; the necessary relocation of physicians, and necessary changes in the draft regulations.

III. Those calling for positive action but not as a rule legislative action. This includes items 3, 4 and 5; namely, extension of hospital and medical insurance on a voluntary basis, already of proved value, to cover the country; and the use of this principle in caring for the indigent.

IV. The one item calling for negative action, namely item 12. This refers to the Wagner-Murray-Dingell bill and other types of vicious legislation.

Finally, just as we have in our program recommended surveys of our medical facilities so that they may be kept up to the best possible level, so the Board of Trustees and the Council on Medical Service and Public Relations should continuously survey the constructive program for medical care and likewise keep it constantly up to date so that it will stay at least even with and, if possible, a step ahead of the needs of the public.

Clinical Notes, Suggestions and New Instruments

SUBCUTANEOUS OR EXTRAPERITONEAL GALLBLADDER

(A REPORT OF AN UNUSUAL CASE)

ROCKWOOD W. BULLARD JR., M.D., CHICAGO

Anomalies of the biliary system have frequently been reported in the past fifty years and there have been a few cases of unusual location of the gallbladder.[1] It has been found in hernial sacs, found floating on a long mesentery within the abdomen and found completely buried in the substance of the liver. There have been a few reported cases of spontaneous biliary fistula through the abdominal wall with extrusion of gallstones.

Early in 1945 at the Presbyterian Hospital of Chicago I operated on a gallbladder which lay directly beneath the skin and on top of the abdominal muscles. A search of the literature has failed to reveal a similar history and for that reason this case would seem to be unique.

The patient was a woman aged 81 who appeared in the clinic with the complaint of a painless mass in the upper right abdomen, which had grown during the previous two years. She had always been in good health and had never had indigestion, pain associated with eating, or jaundice. The mass appeared beneath her ribs two years before, gradually increasing in size and growing more rapidly in the past year.

The tumor appeared to be attached to the underlying muscle, was firm and was not tender. A preoperative diagnosis of a fascial sheath tumor was made and under local anesthesia the mass was removed.

It was lying on the internal oblique muscle and split the fibers of the external oblique. At the upper end of the mass there was a strand of fibrous tissue which split the fibers of the internal oblique and transversalis muscles. This was found to contain a lumen, and a probe could be inserted to a depth of 3 cm. A brownish liquid appeared. This was interpreted as being a bile duct and several small stones were removed. This tumor was not contained in a hernia sac.

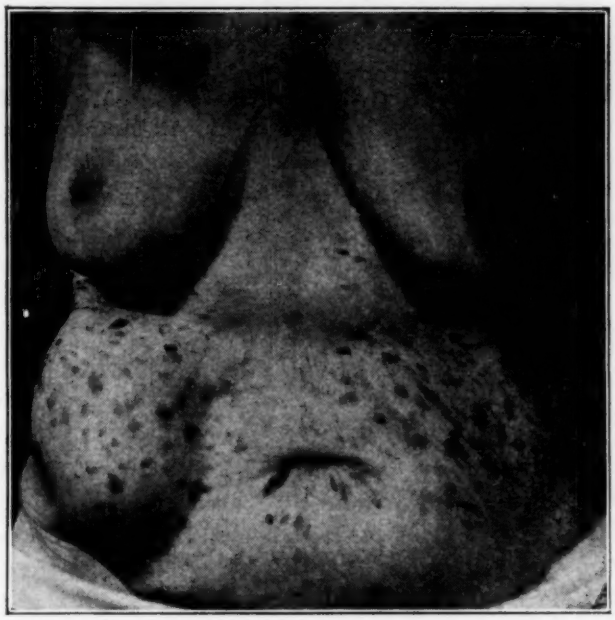

Fig. 1.—Subcutaneous gallbladder under right costal arch.

The tumor was then removed with a small portion of the external oblique muscle. The internal oblique and transversalis were then retracted and the peritoneum incised; a finger placed in the abdominal cavity could palpate a small, tubulized structure which was interpreted as being the cystic duct. A catheter was placed in this duct, the external oblique and skin were closed and the patient was returned to the ward.

Fig. 2.—Specimen from patient shown in figure 1 cut open, showing gallbladder containing stones.

Injection of diodrast through the tube confirmed the belief that we were dealing with the cystic duct. When it was opened, the tumor was found to contain a brown stained mucus and numerous faceted gallstones. Microscopic section of the wall of the tumor showed that we were dealing with the gallbladder.

The patient was allowed out of bed the following day, drained nothing from her tube and subsequently made an uneventful recovery.

From the Surgical Service of the Presbyterian Hospital.

1. Gross, R. E.: Congenital Anomalies of the Gallbladder, Arch. Surg. 32: 131 (Jan.) 1936. Gould and Pyle: Anomalies and Curiosities of Medicine, Philadelphia, W. B. Saunders Company, 1896. Cowern, E. W.: Herniated Empyema Opened Through Skin Incision, Minnesota Med. 19: 741 (Nov.) 1936.

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SATURDAY, DECEMBER 1, 1945

THE PRESIDENT'S NATIONAL HEALTH PROGRAM AND THE NEW WAGNER BILL

Last week The Journal published the message sent to Congress on November 19 by President Harry S. Truman submitting a National Health Program. On the same day Senator Wagner of New York introduced for himself and Senator Murray Senate S. 1606, and Congressman Dingell introduced into the House the same version of the new Wagner-Murray-Dingell bill. Obviously a number of conferences between those interested must have preceded the coordinated action that occurred. Senator Wagner accompanied his introduction of the measure with another opening statement, a brief summary of the health provisions and a long series of questions and answers about the prepaid medical care provisions of the National Health Act of 1945. The language of the President in his message to the Congress and of Senator Wagner in his statement to the Senate and the language of the measure itself are the same trite locutions that the advocates of federal compulsory sickness insurance have used for these many years in trying to force these proposals on the American people. According to Arthur Sears Henning, "the compulsory health insurance plan is chiefly the brainchild of Isidore S. Falk, research director of the Social Security Board, and Michael M. Davis, a member of the C. I. O. Political Action Committee."

Elsewhere in this issue appears an analysis by the Bureau of Legal Medicine of the American Medical Association of the changes in the latest version of the Wagner-Murray-Dingell bill from that introduced previously. Mr. Wagner in his opening statement again informs the Senate that this bill is the result of the constructive suggestions of many outstanding medical authorities and of labor, farm, consumer and health organizations interested in improving the nation's health. Neither the President nor Mr. Wagner nor the Social Security Board made the slightest attempt to consult any representatives of the American Medical Association, which now embraces in its membership more than 125,000 American physicians. Typical of the kind of government that the bureaucrats would force on the American people is this technic of consulting advisers who are known in advance to be in complete agreement with the persons whom they are supposed to advise and of studiously avoiding any one who might offer a contrary opinion. This is government by minority with a vengeance.

The insidious strategy that has been employed in recent years, leading toward culmination by approval of the President of the United States, is clearly apparent to those with an understanding of what has been going on. Since the time when Michael Davis and his associates engineered the formation of the Committee on the Costs of Medical Care down to the present, a gradual enlistment has been secured in behalf of socialized medicine of every agency that could be induced to combine in a movement toward socialization of the American system of government. Around their banner have rallied the members of the so-called Boas' Physicians Forum, certain doctors of philosophy in the field of economics and sociology, the socialistic element in the American Public Health Association and those employed in governmental health agencies who thirst for increased power and expansion of the bureaus that they serve. Let the people of our country realize that the movement for the placing of American medicine under the control of the federal government through a system of federal compulsory sickness insurance is the first step toward a regimentation of utilities, of industries, of finance and eventually of labor itself. This is the kind of regimentation that led to totalitarianism in Germany and the downfall of that nation. Its prime consideration is deduction from the pay of the worker and taxation of the employer so that the government does for the people most of the things that our people in the United States have been accustomed to do for themselves. The time may yet come when the American worker, as was the case with the German worker, will have more deductions from his wages than "take home" pay.

"SOCIALIZED MEDICINE" AND FREE CHOICE

In the President's message to the Congress and in the material written for Mr. Wagner by those whom he employs and consults in the preparation of his proposals, constantly reiterated is the statement that these proposals are not "socialized medicine." The first of Mr. Wagner's questions and answers is concerned with this question in semantics. Worse than socialized medicine is "state medicine." In any system of state medicine the government collects the funds available, manages the service and distributes the payments. Is not this what the Wagner-Murray-Dingell bill would accomplish? True, in the proposed legislation for a federal system of compulsory sickness insurance, patients are told that

they will have free choice of doctors; doctors are told that they will have the right to refuse any patients; but the bill provides that the Surgeon General can limit the number of patients that a physician will see, and that the Surgeon General will provide other physicians when too many patients select one or more of the physicians in a community. The measure mentions free choice of doctor for the patient, but it is free choice within limitations. It is free choice of the doctors who are willing to work under the system. It is free choice if the doctor is willing to work under a fee bill set up by the government. It is free choice if the doctor is willing to accept a payment of so much per person per year for his services. It is free choice if the doctor is willing to work as a salaried member of a group. It is free choice if the doctor is willing to abide by a majority vote of the doctors licensed to practice in his community. What kind of free choice is that?

Senator Wagner has always insisted that compulsory health insurance—really sickness insurance—is not socialized medicine. Actually the proposals involve both socialized medicine and state medicine. The American people are entitled to straightforward, honest statements from their representatives as to what such proposed measures would do to them and to their physicians. They have not had such a straightforward statement either from the President in his message or from Senator Wagner in his statement to the Congress.

THE STATISTICS

In opening his message to the Congress, President Truman referred again to the rejections of registrants under the draft and to the rejections of women who applied to the Women's Army Corps and other women's services. Every fundamental principle of the scientific interpretation of statistics has been violated by the proponents of federal compulsory sickness insurance in their utilization of these figures as propaganda for the measures they propose. The facts have been provided in several previous editorials in THE JOURNAL. One needs only to recognize that the standards of physical fitness for military service changed greatly from the army of preparedness to the end of the war. Men who were rejected as physically unfit for military service in the first year of war were accepted as quite fit for complete service or for limited service in the later years of the war. Furthermore, none of the proponents of this legislation have ever admitted frankly, as they should if they are interested in an honest scientific statement of the facts, that a tremendous number of those rejected as unfit could not be made more fit by any knowledge available to modern medicine today.

In his questions and answers presented to the Congress, Senator Wagner again challenges the statement that health conditions and standards of medical service in the United States are higher than in any other large country in the world. Here are more "tricks" with words. The figures for New Zealand have often appeared better than those of our country, but New Zealand is quite different from the United States and not in any sense of the word comparable. And even if it were comparable, the statistics for New Zealand concern its white European population and carefully avoid citation of its colored and native population. As we go to press New Zealand's system of socialized medicine reportedly faces failure and bankruptcy. Mr. Wagner even challenges the figures for life expectancy in the United States. Let him consult the most recent figures prepared by the leading life insurance companies in this country, which have a financial stake in the life expectancy of the people; he will discover how far ahead the United States really is of any other country in the world with or without a national compulsory system of medical care.

FEDERAL AID FOR HOSPITALS

The President's program includes five features. First is the proposal to grant federal aid for the building of hospitals and health centers throughout the nation. Both the American Medical Association and the American Hospital Association have approved the principles of the Hill-Burton bill, which make this proposal effective. Senator Wagner in his statement to the Congress reminds us that he himself introduced a hospital construction bill in 1940. He has now eliminated from the new Wagner-Murray-Dingell bill the section in the previous draft which concerned hospital construction. This at least is fortunate for the American people because the provisions of the Hill-Burton bill, as modified by the Senate committee which conducted the hearings and which has reported the bill favorably to the Senate, are much more wise and much more scientific than the proposals of Wagner, Murray and Dingell. Under the Hill-Burton bill money will not be spent until the need is shown by a survey conducted in the individual state. Furthermore, state organizations will be developed which will have the responsibility for allocation of funds and the control of the expenditure of funds. The place of the federal government will be to act as custodian of the funds and to provide the funds when adequate evidence of their need and proper utilization is supplied. Incidentally, this measure recognizes that some areas of the country may need funds much more than do others, and beyond the ability of the individual state to match any federal appropriation.

MATERNAL AND CHILD HEALTH SERVICES

The second recommendation by President Truman is for an expansion of maternal and child health services. Apparently President Truman failed to take into account

the pending Pepper bill for maternal and child health, which was analyzed in an editorial published in THE JOURNAL on November 10. Senator Wagner in his statement to the Senate does recognize the existence of other proposals. The Wagner-Murray-Dingell bill would make increased grants-in-aid through the Children's Bureau to the individual states for maternal and child health and crippled children, the states developing their own plans, which, of course, would have to have the approval of the chief of the Children's Bureau. Here the grants are made variable according to the established need in the individual states. The Wagner-Murray-Dingell bill requires that the chief of the Children's Bureau enter into agreements or cooperative working arrangements with the Surgeon General of the Public Health Service to insure coordination in the administration of programs and services in this field. This at least is a recognition of the fact that federal coordination of health activities is a fundamental need in our government at this time. The Congress will soon give authority to the Chief Executive to transfer various agencies in order to secure coordinated action and to bring about unified policies. The American Medical Association has recommended again and again and again that the number one step necessary in coordination of health activities is removal of the Children's Bureau from the Department of Labor to the United States Public Health Service in the Federal Security Agency. Previous presidents have apparently been unable to accomplish this highly desirable objective. The American Medical Association favors the utilization of federal or state funds for the extension of maternal and child health services where needed.

President Truman also urges an extension of public health services throughout the United States. At present less than half the counties in the United States are provided with full time public health service. Perhaps some of our counties could never utilize a full time public health service efficiently; groups of counties could, of course, cooperate. Nevertheless the American Medical Association has been among the leaders of the nation in urging that adequate public health service be made available in every community in our country.

EDUCATION AND RESEARCH

Confusion again prevails when the proposals of the President's message and of the Wagner-Murray-Dingell bill are read in connection with the proposals of the various measures for establishing a National Science Foundation. This Mr. Wagner recognizes in his statement to the Congress; he points out that the Senate Committee on Military Affairs has before it legislation providing for the promotion of medical research and professional education. He indicates that these proposals remain in his revised National Health Act because he wants to help promising individuals without financial means to get a medical education, and he wants to overcome "the restrictions which the medical schools apply particularly to persons of minority groups." For these purposes the sums of $10,000,000 the first year and $15,000,000 the second year are mentioned. Incidentally, the Senator wisely recognizes the necessity for training adequate personnel in the field of public health if progress is to be made in that field. Nevertheless the Congress would do well to place in some single agency all of the various programs allocating funds for training personnel in the field of research, medicine, the public health, the basic medical sciences and related fields of study. Scientists throughout the nation are agreed on the desirability of a National Science Foundation. Physicians favor increased research on cancer and on mental disease and indeed in every medical field in which research could be helpful. They do feel, however, that any National Science Foundation should be directed by a competent board of scientists, who could coordinate research and education. Apparently the present administration seems to prefer a National Science Foundation which would be headed by a politically appointed director. Apparently Wagner, Murray and Dingell seem to prefer a system in which the Surgeon General of the United States Public Health Service would allocate funds to medical schools, research institutions and similar agencies that meet his approval. The movies have a czar who directs and coordinates their activities in certain fields, but they can remove him when they wish to do so and they are free to resign from his support when they wish to do so. Similarly baseball has its czar. Now apparently our government wants a czar for medicine and another czar for research, but there is no way in which those who would be compelled to subscribe for the establishment of the system and for those who would be compelled to work under the system to resign. Their freedom would become a thing of the past.

Incidentally, in his statement on medical research and education, Senator Wagner has one quite revolutionary paragraph. Under the Constitution of the United States the control of medical practice is within the province of the individual states. Here is the statement of Senator Wagner:

> State licensure laws are so complex, so lacking in uniformity and so obstructive of interstate mobility of qualified practitioners that some federal legislation is necessary to bring order out of this chaos. There are no medical schools in some states, and measures to remedy this defect should be considered. Finally, the discrimination which most medical schools practice against student applicants from minority groups requires congressional consideration and appropriate action.

Regardless of whether or not some of the abuses to which the Senator refers exist, the Senator finds only one possible remedy—compulsion by the federal govern-

ment and removal from the individual states of their right to control their own policies. Furthermore, has he made the slightest possible investigation to find out whether or not every state in the United States can support and operate successfully a modern medical school? Has he considered the necessity for teachers, for pupils, for patients? One is reminded of the state which built with federal funds a hospital for crippled children that exhausted the needs of a hospital for crippled children in that state within two years.

COMPENSATION FOR LOSS OF EARNINGS DUE TO SICKNESS

The fifth proposal in the President's program and in Senator Wagner's measure is compensation for loss of earnings due to sickness. The American Medical Association through its House of Delegates has consistently favored such insurance. Most strange among the changes in the present measure offered by Wagner, Murray and Dingell from their previous promulgation is the failure to indicate anywhere in the proposed measure the taxation to be provided on the worker and on the employer to provide funds for this measure. True, the President in his message mentions 4 per cent on the first $3,600 earned by an employee, but the measure itself makes no such mention. Perhaps the mention was avoided deliberately by Senators Wagner and Murray and by Congressman Dingell so that the bill could be referred to the Senate Committee on Education and Labor, of which Senator Murray is chairman, rather than to the Senate Committee on Finance, to which the previous measure was referred. This may serve to secure hearings on the legislation and thus to keep it alive rather than to permit it to sink into the innocuous desuetude that was the fate of the previous measure.

EVILS OF COMPULSORY SICKNESS INSURANCE

Many of the answers included by Senator Wagner in the questions and answers submitted by him to the Senate are denials of the charges repeatedly made against his proposals by those who wish to see the principles of initiative, democracy and freedom maintained in American medicine. Thus he categorically denies that his measure "will destroy the private practice of medicine," that it will place the medical profession "under the direction of one man, the Surgeon General of the United States Public Health Service," that "the National Advisory Medical Policy Council will have no authority," that "the hospitalization provisions in the bill" will "destroy the voluntary hospital system," that "medical education will be controlled by the Surgeon General," that "the bill will plunge the physicians into political slavery," that "people will be obliged to take any doctor the Surgeon General tells them to," that "the Surgeon General of the Public Health Service" will have "the power and authority to designate which doctors can be specialists." The Senator by sophistic argument and smooth phrases categorically denies all of these charges against this measure; THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION now insists that every one of these charges against the measure is valid and that the actual text of the measure itself is the proof of that validity.

No one will ever convince the physicians of the United States that the Wagner-Murray-Dingell bill is not socialized medicine. By this measure the medical profession and the sick whom they treat will be directly under political control. By this measure the great system of private hospitals and community hospitals that have grown up in our country will depend for their continued operation on funds paid to them by a federal government agency. By this measure the philanthropic efforts for the care of the sick, which have been the pride of our nation, will be forever deterred. Through this measure competent young men who would enter the medical profession will be forced to seek other fields of action still remaining under our democracy which still permit the exercise of individual initiative and freedom of thought and action. By this measure doctors in America would become clock watchers and slaves of a system. Now, if ever, those who believe in the American democracy must make their belief known to their representatives, so that the attempt to enslave medicine as first among the professions, industries or trades to be socialized will meet the ignominious defeat it deserves.

BACITRACIN, A NEW ANTIBIOTIC

In a study of the bacterial flora of contaminated wounds, Johnson and his associates [1] of the departments of surgery and biochemistry, Columbia University College of Physicians and Surgeons, found that pathogenic micro-organisms appeared at times on blood agar plates following direct plating of the injured tissues; these were not demonstrable in broth cultures made at the same time from the same material. This occurred most frequently when the broth cultures contained nonpathogenic contaminants of the Bacillus subtilis group. Many of these contaminants had an inhibiting action on subsequent platings with gram positive cocci, one strain being of particularly high antibiotic titer. The active principle of a cell free filtrate from this strain has been named "bacitracin" by the Columbia University investigators.

"Bacitracin" is formed by surface growth of this strain on a variety of liquid mediums but not in submerged growths, the maximum titer being reached after

1. Johnson, Balbina A.; Anker, Herbert, and Meleney, F. L.: Science **102**: 376 (Oct. 12) 1945.

three to five days' incubation at 37 C. This antibiotic is insoluble in ether, chloroform, acetone or ethyl acetate but can be extracted from broth cultures with normal butanol. Evaporation of the butanol extract by steam distillation in vacuo results in a grayish white powder.

"Bacitracin" thus prepared is a neutral substance not precipitable by manipulating the p_H. In this it differs from other earlier antibiotics.[2] The substance is water soluble and coctostable. It is nonhemolytic for human or sheep erythrocytes and resists digestion with pepsin or trypsin. The substance is nontoxic on intraperitoneal or intravenous injection into laboratory animals or on subcutaneous injection into human volunteers. It is nonirritating when applied to the human conjunctiva.

A tentative standard "unit" of bacitracin was adopted by the Columbia University surgeons, an amount which diluted 1,024 times and added to 2 cc. of beef infusion broth will completely inhibit the growth of a stock culture of hemolytic streptococci. This is apparently about 500 times the Oxford unit used in standardization of penicillin. Adopting this unit, the material obtained by harvesting from a synthetic culture medium at times assays as high as 10 Columbia units per cubic centimeter (the equivalent of 5,000 Oxford units). This abundant yield would be of trade interest if the new product should be produced commercially.

The new antibiotic is active against a wide range of pathogenic micro-organisms. From 0.001 to 0.002 Columbia unit gives complete bacteriostasis with standard suspensions of pneumococci, hemolytic streptococci and Clostridium welchi. Slightly larger doses are required for complete inhibition of Clostridium histolyticum, gonococci and meningococci. Escherichia coli and Proteus vulgaris are not inhibited.

In vivo protection tests have been made on mice injected intraperitoneally with 10,000 minimum lethal doses of hemolytic streptococci. If this inoculation is followed at three hour intervals for thirty-six hours by subcutaneous injections of 1 unit of bacitracin, approximately 90 per cent of the injected mice survive. The control mortality is 100 per cent. Guinea pigs similarly injected with multilethal doses of C. welchi or C. septicum are 100 per cent protected by repeated subcutaneous injections of bacitracin.

Thus far bacitracin has been used locally to treat a number of human infections due to hemolytic streptococci and staphylococci. The results are equal to the response in similar cases to local penicillin therapy. Attempts are now being made to produce bacitracin by large scale commercial methods. If successful, the new antibiotic should be much cheaper than penicillin.

2. DuBos, R. J.: J. Exper. Med. **70**: 1 (July) 1939. Jansen, E. F., and Hirschmann, D. J.: Arch. Biochem. **4**: 297 (July) 1944. Ganse, G. F., and Brazlini Kova, M. G.: Am. Rev. Soviet Med. **2**: 134 (Dec.) 1944.

Current Comment

TREATMENT OF PEPTIC ULCER WITH AMINO ACIDS

A recent report by Co Tui and his co-workers[1] from several departments of the New York University College of Medicine presents some rather astonishing results from the treatment of patients with peptic ulcer by high amino acid feedings. Twelve patients with duodenal ulcer, 5 with combined duodenal and gastric ulcer, 7 with gastric ulcer, 1 with suspected marginal ulcer and 1 with radiologically confirmed marginal ulcer were placed on feedings at two hour intervals of dextrimaltose and a preparation made by hydrolyzing amino acids. Included in the group were the 4 original patients with peptic ulcer who were given the treatment prior to contemplated gastrectomy. The mixture fed contained from 0.5 to 0.8 Gm. of nitrogen and 40 to 50 calories per kilogram of body weight in twenty-four hours. The length of the ulcer history varied from one month to twenty years; 14 were "intractable" cases, as defined by symptoms which had not improved after complete bed rest and strict Sippy treatment for a period of one to five weeks. There were 27 cases in which pain or epigastric distress was the persistent symptom; this stopped in twenty-four hours in 14 and in forty-eight hours in 13. Vomiting, a symptom in 13 cases, stopped immediately after the institution of a diet in 6. Occult blood was present in 15 cases and disappeared within one week. The New York investigators believe that the prompt improvement manifest in these cases appears to be due to the protein hydrolysate, which is simultaneously an antacid and an easily assimilable food which can be built into the tissue. In the course of this work the protein deficiency was demonstrated in a large percentage of patients with peptic ulcer. The treatment, they point out, does not insure against recurrences when the patient reverts to old dietary habits. Although the number of cases is small and the period of observation short, this therapeutic and supportive use of high caloric and high amino acid feedings deserves to be studied extensively by other qualified investigators.

CONGRESS ON MEDICAL EDUCATION

The Council on Medical Education and Hospitals has announced that the Annual Congress on Medical Education and Licensure will be held at the Palmer House in Chicago on Feb. 11 and 12, 1946. This important session will deal primarily with reconversion problems, including the continuation education of physician veterans, the relocation of physicians and the transition to a peacetime educational program in medical education. Medical educators, licensure authorities, specialty boards and many other groups find these annual meetings of great value. It is particularly important that hotel reservations be made without delay.

1. Co Tui; Wright, Arthur M.; Mulholland, J. H.; Galvin, T.; Barcham, I., and Gerst, G. R.: The Hyperalimentation Treatment of Peptic Ulcer with Amino Acids (Protein Hydrolysate) and Dextri-Maltose, Gastroenterology **5**: 5 (July) 1945.

MEDICINE AND THE WAR

ARMY

INTERNAL MEDICINE CONFERENCE AT LETTERMAN GENERAL HOSPITAL

A conference on internal medicine was recently held at the Letterman General Hospital, San Francisco, under the direction of Brig. Gen. Charles C. Hillman, commanding general of the hospital, and was attended by medical chiefs, consultants and surgeons of various hospitals and service commands. Brig. Gen. Hugh J. Morgan, chief consultant in medicine, represented the Office of the Surgeon General and spoke on the role of medicine in the Pacific war, and Major Clarence Livingood, consultant in dermatology, took part in a panel discussion of diphtheria and lichenoid and allied skin diseases.

McCLOSKEY GENERAL HOSPITAL CITED

The Meritorious Service Unit Plaque was recently awarded to the 1884th Service Command Unit, McCloskey General Hospital, Temple, Texas. By command of Lieut. Gen. Walton H. Walker, commanding general of the Eighth Service Command, the hospital unit is cited "for outstanding devotion to duty, achievement and maintenance of a high standard of discipline from Jan. 1, 1944 to July 1, 1945. As a result of their outstanding devotion to duty, the hospital motto 'Kindness, Happiness and Efficiency' has become a living thing in the minds of patients."

QUALIFIED RESERVE OFFICERS TO RECEIVE PROMOTION

Qualified reserve officers who have not yet received a promotion while on active duty will receive one promotion as they are separated, the War Department recently announced. To be eligible for this promotion, the officer must have served two years in his present rank since Sept. 16, 1940 and must have an efficiency rating of at least 35. This does not apply to promotion above the rank of colonel.

ARMY AWARDS AND COMMENDATIONS

Captain Robert S. Peers

The Bronze Star was recently awarded to Capt. Robert S. Peers, formerly of Oakland, Calif., for meritorious achievement in connection with military operations against the enemy at Leyte, Philippine Islands, from April 30, 1945 to Sept. 2, 1945. "Captain Peers as dispensary surgeon was responsible for the sanitation and medical service for headquarters of a major command. Through his unstinting efforts he maintained an exceptionally high degree of professional medical care and was available at all hours of the day or night. By his patient, sympathetic and therapeutic ministrations he gained admiration and esteem of the men in his unit as well as his patients. Through his efficiency, insistence on sanitary and preventive medical measures and careful attention to duty at all times, Captain Peers contributed greatly to the maintenance of health and morale of this headquarters. His performance of duty was such as to reflect great credit on himself and was in keeping with the best traditions of the military service." Dr. Peers graduated from McGill University Faculty of Medicine, Montreal, in 1930 and entered the service Sept. 9, 1942.

Captain Theodore W. Cooney

The Bronze Star was recently awarded to Capt. Theodore W. Cooney, formerly of Helena, Mont. The citation states that he was awarded the bronze star "for distinguishing himself by meritorious service in connection with military operations against an enemy of the United States from July 4, 1944 to May 8, 1945 in France, Luxembourg, Belgium and Germany. Captain Cooney consistently demonstrated outstanding ability, initiative and skill in the accomplishment of his duties as battalion surgeon. His medical skill, devotion to duty and personal attention to the officers and men proved a material contribution to the *esprit de corps*, combat efficiency, health and welfare of his engineer combat battalion under the severest combat conditions and is worthy of the highest praise." Dr. Cooney graduated from St. Louis University School of Medicine in 1941 and entered the service July 1, 1942.

Major Burdette J. Buck

Major Burdette J. Buck, formerly of Hartford, Conn., was recently awarded the Bronze Star. Dr. Buck was cited for meritorious achievement in support of combat operations against the enemy on the island of Negros in the Philippines, where he served as chief of medical service in the 37th Hospital. He assumed command of the organization June 1, 1945. Dr. Buck graduated from Harvard Medical School, Boston, in 1926 and entered the service in August 1942.

Captain Edgar G. Ingalls Jr.

The Bronze Star was recently awarded to Capt. Edgar G. Ingalls Jr., formerly of Minneapolis, for "heroic achievement" in connection with operations against the enemy in the battle of Leyte on Nov. 19, 1944, while in command of Company E of the same battalion. Dr. Ingalls graduated from the University of Minnesota Medical School, Minneapolis, in 1942 and entered the service July 1, 1942.

Lieutenant Colonel Luis A. Passalacqua

The Legion of Merit was recently awarded to Lieut. Col. Luis A. Passalacqua, formerly of Ponce, Puerto Rico, for "meritorious conduct in the performance of outstanding services from Nov. 17, 1943 to Oct. 1, 1945." Dr. Passalacqua graduated from George Washington University School of Medicine, Washington, D. C., in 1925 and entered the service Oct. 15, 1940.

Capt. Jack G. Blackstone

Capt. Jack G. Blackstone, formerly of Indianapolis, was recently awarded the Bronze Star and one Oak Leaf Cluster for "exceptional medical skill and courage in caring for the wounded while under fire." Dr. Blackstone graduated from the Indiana University School of Medicine, Indianapolis, in 1942 and entered the service Jan. 27, 1944.

Captain Thaddeus J. Valenski

Capt. Thaddeus J. Valenski, formerly of Thompsonville, Conn., recently received an American citation for his service throughout the Italian, French and German campaigns. Dr. Valenski graduated from Tufts College Medical School, Boston, in 1937 and entered the service Sept. 29, 1942.

Major Phil Bleecker

Major Phil Bleecker, formerly of Memphis, Tenn., was recently awarded the Bronze Star "for meritorious achievement during the Italian campaign." The award was in relation to special work in the study of malaria. Dr. Bleecker graduated from the University of Tennessee College of Medicine in 1936 and entered the service June 28, 1941.

Lieutenant Colonel John D. Hughes

The Legion of Merit was recently awarded to Lieut. Col. John D. Hughes, formerly of Memphis, "for outstanding service from Nov. 10, 1943 to March 24, 1945 with the Medical Corps in Italy." Dr. Hughes graduated from the University of Tennessee College of Medicine, Memphis, in 1935 and entered the service July 10, 1941.

MISCELLANEOUS

WARTIME GRADUATE MEDICAL MEETINGS

The following subjects and speakers for Wartime Graduate Medical Meetings have just been announced:

California

Birmingham General Hospital, Van Nuys: Recent Developments in Diabetes, Dr. Howard F. West, December 12; Neurosurgery, Capt., Everett Dickinson, December 26.

U. S. Naval Hospital, Corona: The Streptococcus Problem, Lieut. Comdr. George R. Underwood, December 15; The Use of Products of Fibrinogen and Thrombin in Otolaryngology, Capt. Harry P. Schenck, December 27.

A. S. F. Regional Station Hospital, Oakland: Nephritis, Dr. Thomas Addis, December 12.

U. S. Naval Hospital, Long Beach: Low Back Pain, Major Samuel Weaver, December 19.

Station Hospital, Camp Stoneman, Pittsburg: Diagnosis and Treatment of Abnormal Mechanisms of the Heart, Dr. William J. Kerr, December 15.

Illinois

Station Hospital, Camp Grant: The Treatment of Hypertension by Both Medical and Surgical Means, Dr. Chester M. Kurtz, December 12.

Regional Hospital, Chanute Field, Rantoul: Chronic Disabilities of the Shoulder Region, Dr. Arthur Steindler, December 12.

Station Hospital, Fort Sheridan: Psychosomatic Orientation, Capt. Charles O. Sturdevant, December 12.

Gardiner General Hospital, Chicago: History and Development of Blue Cross Plans, Dr. C. Rufus Rorem, December 5; Section of Vagus Nerves to the Stomach and Treatment of Gastroduodenal Ulcer, Dr. Lester Dragstedt, December 12; Degenerative Lesions of the Nervous System, Dr. LeRoy H. Sloan, December 19.

Mayo General Hospital, Galesburg: Gallbladder Disease, Dr. Warren H. Cole, December 19; The Psychosomatic Problem as Seen from the Point of the Internist, Sidney A. Portis, December 22.

Indiana

Billings General Hospital, Fort Benjamin Harrison: Dermatitis Medicamentosa and Dermatitis Due to Local Irritants, Dr. Francis E. Senear, December 11.

Wakeman General Hospital, Camp Atterbury: Ménière's Disease, Dr. John R. Lindsay, December 12.

Tennessee

Kennedy General Hospital, Memphis: Diagnosis of Bronchogenic Carcinoma. Dr. Robert G. Bloch, December 14.

Wisconsin

Station Hospital, Camp McCoy: The Biochemical Investigation of the Malarial Parasite, Dr. E. A. Evans, December 5; Infectious Hepatitis, Dr. William Middleton, December 12; Recent Advances in Endocrinology, Dr. W. O. Thompson, December 19.

Station Hospital, Truax Field, Madison: Clinical Significance and Management of Anemias, Dr. F. W. Madison, December 5; Nerve and Tendon Injuries, Dr. Sumner Koch, December 19.

UNRRA NEWS

Campaign to Stamp Out Malaria in Italy

According to a recent announcement from the Italian UNRRA mission, the Italian people are cooperating wholeheartedly in the campaign being waged by their government and the United Nations Relief and Rehabilitation Administration to stamp out malaria and other diseases by killing mosquitoes and other insects.

In the small commune Pomezia, during the past summer, most of the population of 4,500 were stricken with malaria. It was necessary to spray more than 20,000 acres of land with DDT to destroy mosquitoes. Homes in the area also were sprayed. At Formia, Fondi, Minturno and Scauri, in Latina province, more than 2,500 homes were disinfested. At Fondi, instead of spraying individual homes, the workers tried an experiment of spraying two large concentric circles around the town itself to erect a poison barrier to mosquitoes breeding outside.

The Pontine marshes, a malarial poison spot once drained by the Italians, had been flooded again by the retreating Germans and the old mosquito-breeding tendencies restored. Allied military authorities did the initial drainage work of restoring pumping stations, removing canal obstructions, repairing bridges, removing mines and "dusting" the marshes with paris green poison from airplanes. UNRRA arranged for the use, by the Italian government, of 7½ million lire to continue the work. It was also requested to lend personnel and equipment to disinfest certain areas which had been missed previously.

UNRRA also gave extensive help with supplies, equipment and supervision in spraying of homes and animal shelters in a 29,000 acre area at Aprilia and in 700 homes at Cassino. Plans are under way for DDT treatment of an afflicted zone in Siracusa which necessitates the spraying of 10,000 homes.

VETERANS

VETERANS ADMINISTRATION TO ASSUME CONTROL OF PROSTHESES

At a recent news conference the following major points were developed by Major Gen. Paul R. Hawley, acting surgeon general of the Veterans Administration:

1. The Veterans Administration will take over on Jan. 1, 1946 all of the development and research work being conducted on prosthetic and sensory devices (artificial limbs, hearing aids, dentures and so on) by the Office of Scientific and Research Development, a wartime agency which is scheduled to go out of existence December 31. In addition, the Veterans Administration will assume on Jan. 1, 1946 the Army's experimental work in these fields in connection with the OSRD and the National Academy of Sciences.

2. This means that the Veterans Administration will become the central federal agency for all research and development work on prosthetic appliances, a step that has been advocated by some congressional and other sources, so that all government as well as outside agencies may benefit from the results of a unified program.

3. Arrangements are now being made with the Bureau of the Budget to transfer the existing research contracts, effective Jan. 1, 1946, to the Veterans Administration so that this work may be continued on an uninterrupted basis. It is estimated that the work will require $1,000,000 per year.

4. The original research and development work on artificial limbs and other prosthetic and sensory devices was initiated through a Special Committee on Prosthetic Devices headed by Dr. Paul E. Klopsteg. It was established by the National Research Council on March 20, 1945 to conduct an intensive campaign in this field, which resulted in many excellent results. In addition to the OSRD program, the Veterans Administration has been conducting limited experimental and development work at its hospital in the Bronx, New York.

5. It is emphasized, however, that the permanent research and development program is concerned only with the long-range future aspect of the problem. In other words, it seeks to develop the best and most modern appliances and does not include instruction as to their actual and immediate usage.

6. To meet this vital phase of the problem, the Veterans Administration has formulated plans for an immediate research and educational program to teach the disabled veteran to use artificial limbs or other prosthetic and sensory appliances properly as quickly as possible. Leading specialists in this field will be employed to supervise the activities. A formal announcement will be made as soon as key personnel have been selected to head the program.

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Alabama

Abbott, Charles E. Jr., Lt. Col., 27 Univ. Cir., Tuscaloosa.
Cooley, Beamon S. Jr., Major, 1322 N. 31st St., Birmingham.
Holman, Norman W., Capt., Ozark.
Robinson, Edward B. Jr., Major, TCI Hosp., Fairfield.
Teasley, Gerald H., Lt. Col., 701 E. Pryor, Athens.
Welch, Oliver W., Capt., 506 Norfolk Lane, Birmingham.
Williams, James C., Capt., % Mrs. W. W. Williams, Atmore.

Arizona

Wheeler, Norman O., Capt., 604 S. 2d St., Globe.

Arkansas

Chamberlain, Warren W., Lt. Col., 34 Ramble Rd., Hot Springs.
Heinemann, Sol, Capt., 510 Walnut St., Newport.
Hosmer, Silas R., Capt., Vet. Hosp., Fayetteville.
Reagan, Charles H., Major, Marked Tree.
Regnier, Waldo A., Major, 145 Main St., Crossett.
Schirmer, Roy E., Capt., % Health Dept., Fort Smith.

California

Abbott, Charles G., Capt., 360 W. Elk. St., Glendale.
Althouse, Hugh C., Capt., 1401 S. Hope St., Los Angeles.
Arnold, Ferris L., Major, 110 Pine Ave., Long Beach.
Baisinger, Cecil F., Capt., 100 Congress St., Pasadena.
Bell, Nelson C., Capt., 3536 Scott St., San Francisco.
Bolton, Warren F., 1st Lt., 139 S. Boyle Ave., Los Angeles.
Bradley, William G., Major, 7755 Jellico Ave., Northridge.
Bramble, Russell B., Lt. Col., Gen. Del., S. San Francisco.
Bronstein, Louis J., Capt., Dos Palos.
Bryner, Sergius, Capt., 1127 Johnson Ave., Menlo Park.
Covel, Martin B., Capt., U. C. of Hosp., San Francisco.
Du Brow, Aaron A., Major, Community Hosp., Long Beach.
Finocchiaro, Cirino, Capt., 1506 W. Vernon Ave., Los Angeles.
Friedrich, Leland E., Capt., 2701 14th Ave., Oakland.
Gilmore, William L., Capt., 1494 7th Ave., San Francisco.
Gump, Millard E., Major, 694 Haddon Rd., Oakland.
Hendricks, Coleman B., 1st Lt., 1200 N. State St., Los Angeles.
Hittleman, Joseph, Capt., 132 N. Soto St., Los Angeles.
Kittle, W. F., Major, 1027 S. Westmoreland Ave., Los Angeles.
Lones, Frank E., Capt., 945 Vine St., Paso Robles.
Lyon, Thomas P., Major, 135 N. Dowdy St., Gilroy.
Madsen, Leo J., Lt. Col., 142 Adelaide Dr., Los Angeles.
Maguire, Joseph F., Lt. Col., 755 Lillian Way, Hollywood.
Miller, Donald B., 1st Lt., Rt. 1, Box 718, Crescent City.
Morris, George W., Capt., 4439 35th St., San Diego.
Pettet, Charles H., Capt., 2200 W. 3d St., Los Angeles.
Portalupi, Henry C., Capt., 487 E. Julian St., San Jose.
Rehm, Robert, Capt., Southern Pacific Hosp., San Francisco.
Robertson, John W., Capt., Box S, Livermore Sanit., Livermore.
Robinson, Hewitt H., Col., 1636 High St., Oakland.
Ruby, Carl, Capt., 8125½ Blackburn Ave., Los Angeles.
Schock, Robert H., Capt., Post Office Bldg., Soledad.
Schwarz, Hubert F., Major, 96 Broadmoor, San Anselmo.
Shotwell, Cecil L., Capt., 1422 N. Genesee Ave., Hollywood.
Silverglade, Alexander, Major, Arroyo Del Valle, Livermore.
Silverstein, Bernard, Major, 3787 S. Vermont Ave., Los Angeles.
Stamler, Allan E., Major, 1108 Whitley, Corcoran.
Toma, John J., Major, 6667 Sunset Blvd., Hollywood.
Ward, Henry C., Capt., 1146 Cedar Ave., Long Beach.
Wells, Robert W., Capt., 3810 Sacramento St., San Francisco.
White, Carroll W., Major, 1728 4th St., LaVerne.
Williams, A. J., Lt. Col., 61 San Andreas Way, San Francisco.
Wolf, Robert W., Capt., 870 Market St., San Francisco.
Zombro, Frederick B., Capt., 1701 Fairmont Ave., La Canada.
Zukovich, George E., Lt. Col., 2626 University Ave., San Diego.

Colorado

Blevins, Jason L., Capt., 1323 Locust, Denver.
Steiner, Howard A., Capt., 4315 E. 16th St., Denver.
Stull, John D., 1st Lt., 1560 Downing, Denver.
Tice, Frederick G. Jr., Capt., Mt. Harris.

Connecticut

Diskan, Albert E., Major, Manchester.
Kraszewski, H. W., Capt., 524 Eddy Glover Blvd., New Britain.
Macdougall, Archibald D., Capt., 310 Thames St., Groton.
Margolius, Norman C., Major, 127 Grove St., Waterbury.
Scanlon, John J., Major, 230 West Ave., South Norwalk.

Delaware

Stroud, Henry H., Major, RD 1, Seaford.

District of Columbia

Hoffman, Jay L., Lt. Col., St. Elizabeths Hosp., Washington.
Simpson, Robert L., Capt., 400 Argyle Ter. N.W., Washington.
Spence, George R., Capt., The Children's Hosp., Washington.
Tobin, William J., Major, Columbia Med. Bldg., Washington.
Tureman, James R., 1st Lt., 3210 Park Pl. N.W., Washington.
Wertz, Fred J., Capt., 3925 Pennsylvania Ave. S.E., Washington.
Whitaker, L. S. Jr., Capt., 1150 Connecticut Ave., Washington.

Florida

Farrington, C. L., Major, 1543 Almeria Way, St. Petersburg.
Hayes, Candler K., Capt., Madison.
Hinton, Andrew H., Major, 416 Ingraham Bldg., Miami.
MacColl, William A., Capt., 220 25th St., Bradenton.
Stephens, A. M. Jr., 1st Lt., 332 Walnut St., Daytona Beach.

Georgia

Blackford, L. M., Major, 758 Wildwood Rd. N.E., Atlanta.
King, James T., Major, 1062 Oxford Rd., Atlanta.
Ranck, Edward B., Lt. Col., Grady Hosp., Atlanta.
Sawyer, James L., Capt., Box 278, Folkston.
Schmidt, Henry L. Jr., Major, 1009 Egmont St., Brunswick.
Simmons, William G., Capt., Emory Univ. Hosp., Emory.
Sullivan, Francis M., Major, Norcross.
Templeton, Clinton M., Major, 405 Greene St., Augusta.

Idaho

Bovenmyer, Earl S., Major, 243 E. 6th St., Pocatello.
Privett, Lowell B., Major, 1812 Harrison Blvd., Boise.

Illinois

Barbour, Ben H. Jr., Capt., 311 E. Broadway, Centralia.
Beebe, Norman S., Capt., Colfax.
Bendix, Richard M., Capt., 4655 S. Lake Park, Chicago.
Biddlecombe, Duncan, 1st Lt., 109 S. Chestnut, Shelbyville.
Blackard, William J., Capt., 513 N. Webster St., Harrisburg.
Bowen, Robert E., Major, 1819 W. Polk St., Chicago.
Brady, John M., Capt., 5001 W. Monroe St., Chicago.
Braude, Abraham I., Capt., 5543 W. Jackson Blvd., Chicago.
Bunchman, Lester P., Capt., Crang Bldg., Clinton.
Burns, Francis J., Capt., 7207 Blackstone Ave., Chicago.
Campbell, Paul A., Col., 700 N. Michigan Ave., Chicago.
Carney, Paul W., Capt., 757 S. 3d St., DeKalb.
Cendella, Francis J., Major, 1630 5th Ave., Moline.
Crowder, Earl R., Lt. Col., 620 Barton Ave., Evanston.
Culmer, Charles U., Major, Passavant Mem. Hosp., Chicago.
Dahl, John J., Capt., 238 N. Pine Ave., Apt. 206, Chicago.
Drago, Rosario C., Capt., 3315 W. 65th Pl., Chicago.
Eggers, John F., Major, 818 Somonauk, St., Sycamore.
Ehrhardt, Oliver E., Major, 1520 Bates Ave., Springfield.
Einhorn, Harold, Major, Champaign.
Fahrner, Richard H., Capt., 809 Douglas St., Joliet.
Fair, John R., Capt., Wolf Lake.
Fisk, Kenneth L., Capt., 48 Thorndale Ave., Roselle.
Fitzgerald, Gerald J., Capt., 2232 Central Park Av., Evanston.
Fredrikson, Lynn C., Capt., 2100 Burling St., Chicago.
Freiheit, Harold J., Capt., 1018 Broadway, Highland.
Freilich, Joseph K., 1st Lt., 2300 Lincoln Park W., Chicago.
Friedman, Isadore E., Capt., 3131 Douglas Blvd., Chicago.
Gianturco, Cesare, Lt. Col., 602 W. University Ave., Urbana.
Grubman, Marvin, Capt., 3730 Dickens Ave., Chicago.
Guerrieri, John A., Capt., 5202 Wolfram St., Chicago.
Hammond, Kenneth H., 1st Lt., 804 E. Maple St., Hoopeston.
Hodges, Clarence V., Capt., 950 E. 59th St., Chicago.
Holmes, George W., Capt., 340 Barry Ave., Chicago.
Horning, Victor H. H., Capt., 1742 New England Ave., Chicago.
Hospers, Cornelius A., Lt. Col., 7245 S. Shore Dr., Chicago.
Johnson, William E. G., Capt., 7811 Euclid Ave., Chicago.
Kimball, Ernest R. Jr., Major, 918 Michigan Ave., Evanston.
Klein, Max E., Major, 2431 N. Nordica Ave., Chicago.
Kobisk, Oliver A., Major, 67 E. Wilson St., Batavia.
Koch, Joseph M., Capt., 1927 Edison Ave., Granite City.
Krawczynski, A. C., Capt., 6044 S. Fairfield Ave., Chicago.
Kunde, Emerson C., Major, 726 Washington St., Woodstock.
Kurtz, James F., Major, 7147 Harvard Ave., Chicago.
Kushner, Abraham, Capt., 2037 Howard St., Chicago.
Levy, Robert C., Capt., 5555 Everett Ave., Chicago.
Lichtenstein, Manuel E., Lt. Col., 1400 N. Kedzie Ave., Chicago.
Loeffler, Robert W., Major, 4137 S. Wenonah Ave., Berwyn.
McNutt, Justin C., Capt., 620 Maple St., Bloomington.
Martin, Albert G., Major, 545 Hardin St., Aurora.
Martin, Forrest R., Major, 250 N. Water St., Decatur.

PHYSICIANS SEPARATED FROM SERVICE

Illinois—Continued

Mathis, John H., Major, 400 S. Sheridan Rd., Peoria.
Mauzey, Armand J., Major, 2970 Sheridan Rd., Chicago.
Mindlin, Joseph, Capt., 1041 Irving Park Rd., Chicago.
Nelson, Melvin J., Capt., 4331 W. Schubert Ave., Chicago.
Osborne, George M., Capt., 5140 Glenwood St., Chicago.
Penning, Howard L., Capt., 925 S. Cleveland, Springfield.
Perlmutter, Harold M., Capt., 916 E. 55th St., Chicago.
Peters, Walter J., Capt., 833 N. Rockwell St., Chicago.
Picard, Arthur P., Major, 7200 Paxton Ave., Chicago.
Pohl, Carl M. Jr., Capt., 5737 W. Race Ave., Chicago.
Powell, Harry I., Capt., 4942 N. Kimball Ave., Chicago.
Puckett, Francis L., Capt., Box 286, Stonington.
Rasche, Herbert P., Capt., 202 S. 12th Ave., Maywood.
Reagan, Sheldon W., Capt., Aroma Park.
Redmond, Ralph N., Capt., % Central Trust Bldg., Sterling.
Robinson, Leon E., Lt. Col., 502 S. Maple St., Aledo.
Rosenberg, Jack, Capt., 237 Le Grange Blvd., Aurora.
Rosenthal, Irving H., Major, 3425 Douglas Blvd., Chicago.
Ross, Donald, Capt., Univ. of Chicago Clinics, Chicago.
Rossiter, Donald E., Capt., 1871 Lyman Ct., Highland Park.
Rudnick, Dorrin F., Lt. Col., 457 W. Oakdale Ave., Chicago.
Sanders, Zal H., Capt., 713 13th St., Rock Island.
Schaffer, Bernard J., Capt., 3925 W. Gladys Ave., Chicago.
Schiff, Joseph H., Major, 3875 W. Polk St., Chicago.
Schnicke, Elmer H., Capt., Waynet.
Scott, Walter E., Capt., Lexington.
Scudieri, Carmen, Capt., Box 206, Gardner.
Sheehan, Edward C., Capt., 157 N. Leamington Ave., Chicago.
Siegal, Henry A., Capt., 507 S. Central Ave., Chicago.
Siegel, Morris, Capt., Mt. Sinai Hosp., Chicago.
Silverstein, Joseph, Major, Cook County Hosp., Chicago.
Simmons, Warren K., Major, St. Luke's Hosp., Chicago.
Slotta, Alfred M., Capt., 5945 W. Belmont Ave., Chicago.
Sosson, Edward, Major, 1724 N. Kedzie Ave., Chicago.
Spencer, Robert A., Capt., 1404 Washington, Beardstown.
Stadelman, Chester H., Capt., 4508 N. Racine Ave., Chicago.
Steinberg, Nathan, 1st Lt., 950 E. 59th St., Chicago.
Stoops, Richard B., Capt., 7524 Stewart Ave., Chicago.
Swift, Frederick J. Jr., Major, 411 Dickens St., Chicago.
Topp, James H., Capt., 801 Erie St., Oak Park.
Towle, Gilbert A., Major, 355 Ridge Ave., Evanston.
Vacante, Anthony B., Capt., 2636 N. Richmond St., Chicago.
Wagner, David, Major, 6 N. Michigan Ave., Chicago.
Wagner, Jack, Capt., 1820 S. Central Park Ave., Chicago.
Walsh, Eugene L., Major, 815 Ridge Ave., Evanston.
Weidner, Morris R. Jr., Capt., 14105 Lincoln Ave., Dolton.
Weiner, Harry I., Major, 2513 N. Clark St., Chicago.
Wojtalewicz, L. F., Major, 1451 N. Bosworth Ave., Chicago.
Wolf, Alexander, Capt., 1616 W. Northshore Ave., Chicago.
Wolin, Irvin, Major, 104 S. Michigan Ave., Chicago.
Wolters, Simon L., Capt., 5841 Maryland Ave., Chicago.
Zarcone, Vincent P., Capt., 645 S. Dennis, Decatur.
Zimmerman, Lazar E., Major, 33 N. Ayer St., Harvard.

Indiana

Adler, David L., Major, 12 E. Broadway, Shelbyville.
Barton, Willoughby M., Capt., Centerville.
Burnikel, Ray H., Capt., 146 W. 18th, Indianapolis.
Cushman, Joseph B., Capt., P. O. Box 123, Gary.
Dierolf, Edward J., Capt., 6049 Miller Ave., Gary.
Dorman, Jack, Capt., 4059 Central Ave., Indianapolis.
Fisher, Henry, Capt., 1704 E. 34th St., Marion.
George, Charles L., Capt., RR 16, Box 311 H., Indianapolis.
Green, Frederick C., 1st Lt., 1002 Hugh St., Fort Wayne.
Hall, Emory H., Major, 421 S. Main St., Dunkirk.
Meade, Walter W., Major, Bicknell Hosp., Bicknell.
Moss, Mavor J., Capt., Yorktown.
Rininger, Harold C., Capt., R. R. 3, Rockport.
Shortz, Gerald, Capt., 102½ N. Main St., Kendallville.
Spindler, Robert D., Capt., 1431 A. Ave., New Castle.
Steele, Brandt F., Major, 477 N. Audubon Rd., Indianapolis.

Iowa

Andersen, Holger M., Capt., Strawberry Point.
Berney, Paul W., Major, 834 20th St. S.E., Cedar Rapids.
Edington, Frank D., Col., 445 W. 2d St., Spencer.
Grinley, Andrew V., Capt., Rockwell City.
Oelrich, August M., Capt., Box 194, Hull.
Plankers, Arthur G., Major, Dubuque.
Randall, Ross G., Major, 741 Melrose Ave., Iowa City.
Shorey, Joseph R., Capt., 1115 E. Rusholme St., Davenport.

Iowa—Continued

Thorburn, Oral L., Major, 929 Murray Dr., Ames.
Ware, Stephen C., Major, Kalona.
White, Thomas B., Capt., Plain Dealing.

Kansas

Franklin, Glenn C., Capt., Univ. of Kan. Hosp., Kansas City.
Kaufman, LeRoy V., Capt., 404 S. Rutan, Wichita.
Robinson, David W., Capt., Univ. of Kansas Hosp., Kansas City.
Rumold, Mervin J., Lt. Col., 1919 Olathe Blvd., Kansas City.
Schulte, Edward J., Capt., 505 N. Summitt, Girard.
Shrader, Doyle A., Capt., Sawyer.
Stensaas, Carl O., Major, 321 N. 2d St., Lindsborg.
Voldeng, Karl E., Lt. Col., 321 E. 10th, Wellington, Sumner Co.
Walters, Byron W., Capt., Lawrence.
Wenke, Leo L., Capt., 2324 Broadway, Great Bend.

Maine

Coffin, Silas A., Major, 39 High St., Bar Harbor.
Famularo, Nicholas A., Capt., Jackman Station, Jackman.
Larson, Karl V., Major, 41 Court St., Machias.
Pomerleau, Ovid F., Capt., 129 Silver St., Waterville.
Skillin, Charles E., 1st. Lt., 14 Adelbert St., South Portland.

Maryland

Babb, Dudley C., Major, Ruxton.
Eastman, Wilfred W. Jr., Major, 210 Tulip Ave., Takoma Park.
Goodman, Howard, Lt. Col., 511 Wilton Rd., Towson.
Hope, Daniel Jr., Capt., Ellicott City.
Steinberg, Morris W., Capt., 2800 Auchentoroly Ter., Baltimore.
Wilkins, Jesse L., Capt., Pocomoke City.
Wilson, Harry T. Jr., Capt., 1903 E. LaFayette St., Baltimore.

Mississippi

Street, Glenn Jr., Lt. Col., 201 Peace St., Canton.
Williams, Harvey M., Major, Gibson Rd., Aberdeen.

Montana

Brooke, Joseph M., Capt., Ronan.
Rathman, Omer C., Lt. Col., 144 Avenue E, Billings.
Stewart, Robert M., Capt., 525 3d St., Whitefish.

Nebraska

Brillhart, Everett G., Major, Shelby.
Holmes, William E., Capt., 3747 Holdrege, Lincoln.
Matson, Roy M., Major, Holdrege.
Reeder, Robert C., Capt., Holdrege Hosp., Holdrege.
Staubitz, Herbert F. F., Capt., 4702 Walnut St., Omaha.
Taborsky, Albert F., Capt., 308 Security Mutual Bldg., Lincoln.

Nevada

Oredson, Gustaf A., Capt., % Con. Coppermines Co., Kimberly.
Sawyer, Harry W. Jr., Major, Box 49, Fallon.
Stahr, Roland W., Capt., P. O. Box 966, 348 Hillcrest Dr., Reno.

New York

Almour, Ralph, Major, 850 Amsterdam Ave., New York.
Altman, Jacob, Major, 357 W. 55th St., New York.
Ariola, Leo L., 1st Lt., 8641 19th Ave., Brooklyn.
Ashe, Benjamin I., Lt. Col., 889 Lexington Ave., New York.
Azzara, Charles T., Capt., 176 Tulip Ave., Floral Park.
Brill, Bernard, Capt., 467 9th St., Brooklyn.
Chassin, Maurice R., 1st Lt., 76-36 113th St., Forest Hills.
Diamond, Paul, Major, 10 Monroe St., New York.
Feller, Morris, Capt., 3080 Nostrand Ave., Brooklyn.
Goodman, Edward, Capt., 124 E. 176th St., Bronx.
Harrison, Leslie S., Capt., 37-05 Parsons Blvd., Flushing.
Jenczewski, Casimir G., Capt., 275 Lake Ave., Lancaster.
Kelley, Wayne P., Capt., 10 Marvin St., Clinton.
Kemelhor, Michael C., Major, 5801 18th Ave., Brooklyn.
Kenin, Abel, Capt., 1035 Washington Ave., Brooklyn.
Kent, Louis R., Major, 3 Summit Rd., Port Washington.
Kerr, Benjamin G., 1st Lt., 10 Westminster Rd., Brooklyn.
Kolodny, Aaron J., Capt., 1636 Nelson Ave., Bronx.
Kritzler, Robert A., Major, 3627 216th St., Bayside.
Larkin, John T., Major, Douglaston, L. I.
Lavine, George R., Lt. Col., 2 Eastland Ave., Rochester.
Levine, David, Capt., 2083 Davidson Ave., Bronx.
Levine, Harold, 1st Lt., 445 Warren St., Hudson.
Lieberman, Samuel L., Capt., 581 Eggert Rd., Buffalo.
Lippard, Vernon W., Lt. Col., 114 E. 81st St., New York.

PHYSICIANS SEPARATED FROM SERVICE

New York—Continued

McGuire, Gerald S., Capt., 19 Lapham Park, Webster.
McLoughlin, George W., Major, 52 Spring St., Rochester.
McMahon, Jeremiah J., Lt. Col., 47 89th St., Brooklyn.
MacVay, William A., Lt. Col., 167 Oakdale Dr., Rochester.
Madden, William L., Capt., 21 Westland Ave., Rochester.
Manfredi, Joseph J., Capt., 3109 Park Ave., New York.
Manuele, Charles A., Capt., 34 Parson Ave., Rochester.
Margolis, Hyman, Capt., 5614 15th Ave., Brooklyn.
Maxwell, C. H. Jr., Lt. Col., N. Y. State Educ. Dpt., Albany.
Mayers, Albert N., Major, Psychiatric Inst., New York.
Mebel, Frederick R., Capt., 84 Prospect Park S.W., Brooklyn.
Menden, Julian, Major, 2266 Andrews Ave., New York.
Mehlman, Joseph S., Capt., 111 E. 21st St., Brooklyn.
Mercuri, Pasquale A., Major, 72 Barrow St., New York.
Merker, Aaron, Capt., 2350 Webster Ave., New York.
Messinger, Emanuel, Major, 90-10 150th St., Jamaica.
Mezzatesta, Henry, Capt., 672 Park Pl., Brooklyn.
Miller, Lawson E., Lt. Col., 309 E. 49th St., New York.
Moloshok, Ralph E., Capt., 2720 Grand Concourse, Bronx.
Monteleone, Joseph C., Capt., 145 Montrose Ave., Brooklyn.
Moore, William H., Major, 121 Van Dam St., Saratoga Springs.
Morey, Jerome, Capt., 35 Pond Park Rd., Great Neck.
Mostolfsky, David, Capt., 985 E. 179th St., Bronx..
Muckenfuss, R. S., Col., Resh. Lab., Foot of E. 15th St., N. Y.
Mulcahy, Thomas M., Major, 142 W. 64th St., New York.
Nemiroff, Nathan, Capt., 261 Seaman Ave., New York.
Nisnewitz, Samuel, Major, 665 St. Marks Ave., Brooklyn.
O'Brien, William H., Lt. Col., 66 Judson St., Albany.
O'Connor, Paul J., Capt., 57 W. 57th St., New York.
Orkin, Louis R., Capt., 360 W. 21st St., New York.
Paganelli, Americus J., Major, 144 W. 11th St., New York.
Pagnillo, Lino A., 1st Lt., 17 Ridge St., Tuckahoe.
Patterson, Robert L. Jr., Lt. Col., 148 E. 65th St., New York.
Pellicano, Victor L., Major, 426 7th St., Niagara Falls.
Pennell, Samuel, Capt., 1187 Ocean Ave., Brooklyn.
Perrino, Benjamin A., Capt., 76 Washington St., Poughkeepsie.
Peskin, Henry, Major, 41 W. 96th St., New York.
Pestillo, Mario P., 1st Lt., 242 Baker Ave., Syracuse.
Pfaff, Francis O., Capt., 258 Main St., Oneida.
Phillips, Colgate B., Capt., 135 Park Ave., Bronxville.
Pittinos, G. E. Jr., Capt., 34 Walbrook, Randall Manor, S. I.
Polsky, Murray, Lt. Col., 590 Ocean Ave., Brooklyn.
Porro, Francis W., Major, 201 Proctor Ave., Ogdensburg.
Poster, Henry, Major, 255 E. 176th St., New York.
Radow, Isaac B., Capt., 215 E. Gun Hill Rd., Bronx.
Ragan, Charles A. Jr., Major, 106 Chippewa Rd., Tuckahoe.
Rainey, Harry G., 1st Lt., Station A, Ogdensburg.
Rappa, James E., Major, 681 Clarkson Ave., Brooklyn.
Rauh, Albert E., Major, 722 W. 168th St., New York.
Rhudy, William P., Major, Penn Yan.
Robinson, Arthur, Major, 50 E. 96th St., New York.
Rodger, John A., Major, 258 S. 4th St., Fulton.
Rogers, John F., Lt. Col., 96A S. Hamilton St., Poughkeepsie.
Rogers, Samuel L., Major, 459 Washington Ave., Brooklyn.
Rose, Werner J., Col., 758 Parker Blvd., Kenmore.
Rothenberg, Robert E., Major, 135 Eastern Parkway, Brooklyn.
Sabatini, Silvio A., Major, 412 E. 115th St., New York.
Saxton, Alton J., Capt., Vet. Administration Facility, Batavia.
Saypol, George M., Capt., 122 E. 102d St., New York.
Scharf, Nathan, Capt., 15 Main St., Spring Valley.
Schiller, Carl, Capt., 454 E. 4th St., Brooklyn.
Schleifer, M. R., Major, 221 Brighton Beach Ave., Brooklyn.
Schlessinger, Michael, Capt., 32 E. 75th St., New York.
Schutz, Sigmond, Capt., 187 E. 4th St., New York.
Searles, Paul W., Major, Buffalo Gen. Hosp., Buffalo.
Serlin, Oscar, Capt., 8313 Bay Parkway, Brooklyn.
Severson, Charles H., 1st Lt., 309 Middlesex Rd., Buffalo.
Seward, Frederick T., Major, 275 Main St., Goshen.
Shafiroff, Benjamin G., Lt. Col., 2902 W. 30th St., Brooklyn.
Shainhouse, Arthur, Capt., 180 Bay 26th St., Brooklyn.
Shapiro, Raymond N., Major, 135 Eastern Parkway, Brooklyn.
Shaul, John M., Capt., 115 E. 36th St., New York.
Sher, Benjamin, Capt., 581 Essex St., Brooklyn.
Sherman, Pincus, Major, 1800 Victor St., New York.
Siciliano, Thomas, Major, 255 Woodbine St., Brooklyn.
Siegel, Rubin L., Major, 95-08 Queens Blvd., Forest Hills.
Singer, Leon, Capt., 3451 Giles Pl., Bronx.
Sloan, Lawrence W., Lt. Col., Signia Pl., Riverdale, New York.
Smith, William M., Major, 162-05 89th Ave., Jamaica, L. I.
Sneierson, Hyman, Major, 67 Main St., Binghamton.
Soifer, Samuel, Capt., 102-27 68th Ave., Forest Hills.
Sole, Eugene, Major, 641 Crown St., Brooklyn.
Solomon, Leonard B., Lt. Col., 1165 5th Ave., New York.

New York—Continued

Somach, Irving, Major, 25 E. 77th St., New York.
Steine, Lyon, Capt., 90 Roosevelt Ave., Valley Stream.
Stone, Robert D., Capt., 436 Greene Ave., Brooklyn.
Storrs, Bruce D., Capt., 61 W. 55th St., New York.
Swanker, Wilson A., Capt., R. D. 2, Ballston Spa.
Swanson, Paul R., 1st Lt., Orchard Park.
Tabbat, Samuel F., Capt., 1810 Longfellow Ave., New York.
Taddeo, Mario C., Major, 2311 Beaumont Ave., Bronx.
Tempel, George E., Capt., 130-43 266th St., Laurelton, L. I.
Thompson, Joseph J., Capt., 75 1st Ave., Gloversville.
True, Ansel B., 1st Lt., Hillsdale.
Tuchman, Lester R., Lt Col., 829 Park Ave., New York.
Turano, Leonard F., Capt., 221 Linden St., Brooklyn.
Turner, Joseph C., Lt. Col., 418 W. 118th St., New York.
Tutrone, David A., Major, 64 Harding Pl., Freeport, L. I.
Unger, Max, Capt., State Hosp., Middletown.
Unger, Paul N., Major, 420 Avenue F, Brooklyn.
Valenti, Frank D., Major, 549 Isham St., New York.
Velardi, Martin J., Capt., 711 Union St., Brooklyn.
Vella, Paul D., Major, 456 W. 35th St., New York.
Vesey, Frank A., 1st Lt., 311 E. 72d St., New York.
Wallfield, Mark J., Capt., 1269 46th St., Brooklyn.
Weintrob, David I., Major, 8602 Ridge Blvd., Brooklyn.
Weiss, Fred M., Capt., 20-25 37th St., Astoria, L. I.
Wellmann, Jacques, Capt., 150-31 34th Ave., Flushing.
Werner, Howard L., Capt., 575 Park Ave., New York.
Wetchler, Benjamin B., Capt., 303 E. 17th St., New York.
Wieder, Harry S., Capt., 962 Aldus St., Bronx.
Wolf, Max W., Major, 1869 Walton Ave., Bronx.
Wolff, Herman, Major, % H. Kolb, 4761 Broadway, New York.
Wolff, James A., Capt., 225 W. 86th St., New York.
Wright, Myron, Capt., 24 Bretton Rd., Scarsdale.

North Carolina

Alexander, Leo., Major, Duke Hosp., Durham.
Bostic, William C. Jr., Capt., Forest City.
Caldwell, Jesse B. Jr., Capt., 203 Front St., Cramerton.
Cherry, James H., Major, 39 Edgewood Rd., Asheville.
Covington, Furman P., Capt., Mills Home, Thomasville.
Craven, Frederick T., Capt., 7 N. Union St., Concord.
Cree, Maurie B., Major, Cabarus Theatre Bldg., Concord.
Fleming, Lawrence E., Major, 609 S. Summit Ave., Charlotte.
Fox, Dennis B., Capt., 1515 Oriole Pl., Greensboro.
Gardner, Clarence E. Jr., Lt. Col., Duke Hosp., Durham.
Glenn, Eugene B., Capt., 17 Sylvan Ave., Asheville.
Goldstein, J. J., Capt., James Walker Mem. Hosp., Wilmington.
Hall, Edgar M. Jr., 1st Lt., 1017 Vance St., Raleigh.
Harris, Isaac E. Jr., Lt. Col., 123 W. Main St., Durham.
Hawes, James B., Capt., 523 Evans St., Greenville.
Holladay, Beverly L., Capt., 522 S. Mulberry St., Statesville.
Hunter, John F. C., Capt., Magnolia.
Hutchinson, Robert H., Capt., Duke Hosp., Durham.
Killian, Frank M., Capt., Franklin.
Lancaster, Forrest J., Capt., 109 W. Center St., Lexington.
Lewis, Walter G., Capt., Box 17, Stokesdale.
McDonald, Lester B., Major, Hendersonville.
McKee, Lewis M., Capt., 1020 Sycamore St., Durham.
Moorefield, Robert H., Capt., 403 S. Ridge Ave., Kannapolis.
Odom, Robert T., Capt., Missen Bldg., Winston-Salem.
Perryman, Olin C., 1st Lt., 1019 West St., Winston Salem.
Persons, Elbert L., Lt. Col., Duke Hosp., Durham.
Pope, Samuel A., Capt., Beulaville.
Renegar, James G., Capt., Bennett St., Southern Pines.
Rhodes, James S. Jr., Capt., 100 Simmons Ave., Williamston.
Richie, Richard F., Major, 1816½ Arlington St., Raleigh.
Sawyer, Logan E., Major, South Mills.
Sirlin, Edward M., Lt. Col., 1300 Broad St., Durham.
Sotirion, George A., Capt., Charlotte Mem. Hosp., Charlotte.
Stenhouse, Gordon C., Capt., Duke Hosp., Durham.
Thomas, Walter L., Major, Duke University Hosp., Durham.
Troutman, Baxter S., Capt., 206 Olive Ave., Lenoir.
Warshauer, Samuel E., Major, 1009 Market St., Wilmington.
Windley, William H., Major, Washington.
Wood, George T. Jr., Col., 1104 Forest Hill Dr., High Point.

North Dakota

Anderson, Harry O., 1st Lt., Velva.
Baggenstoss, Osmond J., Capt., 235 1st Ave., West Dickinson.
Christiansen, Harold A., Major, Box 476, Jamestown.
Driver, Donn R., Capt., 307 Washington St., Bismarck.
Johnson, Christian G., Lt. Col., Rugby.
Johnson, Maxwell H. D., Capt., Watford City.
Swingle, Alvin J., Major, 222 W. Main St., Mandan.

PHYSICIANS SEPARATED FROM SERVICE

Ohio

Albert, Irwin C., Major, 1546 Beaverton Ave., Cincinnati.
Albl, Frank O., Capt., 4966 Edgepark Dr., Garfield Heights.
Althoff, William R., Major, 2035 Salem Ave., Dayton.
Askue, Chester M., Capt., 53 W. Florida Ave., Youngstown.
Axelson, Oscar A., Capt., 4044 Hudson Dr., Youngstown.
Barker, Harold J., Major, 2734 Hampshire Rd., Cleveland Hgts.
Bartunek, Robert R., Major, 18720 Scottsdale Blvd., Cleveland.
Berger, I. L., Major, 3424 Beechwood Ave., Cleveland Hgts.
Blinn, J. C. Jr., Lt. Col., 206 E. High Ave., New Philadelphia.
Boyer, B. E., Lt. Col., 3565 Shaw Ave., Hyde Pk., Cincinnati.
Bremen, Harry, Major, 721 Lexington Ave., Dayton.
Brewer, Russell M., Capt., 444 E. Mulberry St., Lebanon.
Browne, Kenneth B., Capt., Whitehouse.
Buchanan, Richard R., Capt., 3114 Portsmouth Ave., Cincinnati.
Buck, John F., Capt., 2837 118th St., Toledo.
Burgess, Everett C., Capt., 524 N. Buckeye St., Wooster.
Burstein, Henry A., Lt. Col., 334 W. Bancroft St., Toledo.
Chambers, David A., Col., 3651 Rawnsdale Rd., Cleveland.
Colla, Joseph, Capt., 321 Midlothian Blvd., Youngstown.
Crawford, Myron E., Capt., 6718 Franklin Blvd., Cleveland.
Crumley, Harold M., Major, Chillicothe.
Cunningham, Ralph B., Capt., 737 Elliott Ave., Arlington Hgts.
Ditch, Edward G., Capt., 1102 North St., Caldwell.
Dougherty, Clark M., Lt. Col., Saltwell Rd., New Philadelphia.
Easton, James W., Lt. Col., Akron.
Emery, George M., Capt., Countryside, Ashland.
Evans, George L., Major, 477 Devey St., Mansfield.
Felson, Walter, 1st Lt., 357 South St., Greenfield.
Fox, Dale E., Major, % Mrs. John Noll, Covington.
Freilich, Myron A., Major, 534 Ball St., Zanesville.
Gates, Stephen E., Capt., 1032 Lake Rd., Conneaut.
Graf, Douglas P., Capt., 2934 Vernon Pl., Cincinnati.
Greenberger, Maurice L., Capt., Courtland Hotel, Canton.
Guilford, Frederick R., Major, 139 Wilbur Ave., Columbus.
Gustafson, Milton H., Capt., 10126 Fidelity Ave., Cleveland.
Hall, Raymond A., Capt., 3521 Hopkins Rd., Youngstown.
Hallaran, W. R., Lt. Col., 9718 Lake Shore Blvd., Cleveland.
Hamilton, John M., Capt., 1344 Hann Bldg., Cleveland.
Hamman, Reuben H., Capt., Waterville.
Hardman, Edward F., Major, 1050 Wilson Ave., Youngstown.
Haynes, Ormond L., Capt., RFD 1, Marietta.
Henderson, John F., Capt., 1269 Kenmore Blvd., Akron.
Hepp, William, Capt., 3011 Beaver Ave., Cincinnati.
Hershberger, Ralph E., Capt., 14 Miami St., Tiffin.
Humel, Elbert J., Capt., 3584 W. 50th St., Cleveland.
Ingling, Howard H., Capt., 803 S. Linestone St., Springfield.
Joelson, James J., Major, 2374 Roxboro Rd., Cleveland Heights.
Johnson, Herbert H. Jr., Capt., University Hosp., Cleveland.
Jordan, Valdemar M., Capt., University Hosp., Cleveland.
Kackley, Desmond D., Major, University Hosp., Columbus.
Kalb, Nathan, Capt., Cygnet.
Katz, Sidney, Capt., 10808 Massie Ave., Cleveland.
Kaylor, Frederick W., Capt., Bellefontaine.
Kechele, Oliver J., Major, 93 E. Bridge St., Bera.
Kotte, Robert H., Lt. Col., 259 Greendale Ave., Cincinnati.
Kubiac, Willis T., Capt., 122 E. Main St., Lancaster.
Kulle, Henry F., Major, 1152 Overlook Ave., Cincinnati.
Layman, Orville L., Capt., 18 W. 4th St., Franklin.
Levin, Jack J., Capt., Vet. Administration Facility, Dayton.
Lichtblau, Abe A., Capt., 1710 Vassar N.W., Canton.
Liebow, Irving M., Major, 246 E. 105th St., Cleveland.
Lowry, Kenneth F., Lt. Col., 119 S. Mulberry St., Troy.
McAuley, James R., Capt., 432 E. 2d, Perrysburg.
McGaw, Wilbert H., Lt. Col., 15518 Oakhill Rd., E. Cleveland.
Mallin, Lloyd P., Capt., 891 Clinton Springs, Cincinnati.
Marsico, Henry C., Capt., 1948 Broadway, Lorain.
Maryanski, William H., Major, 390 Dorchester Rd., Akron.
Mattocks, Theodore R., Capt., 231 3d St., Marietta.
Merchant, Frederick T., Major, 1076 E. Center St., Marion.
Miller, Michael M., Major, 2516 Sunset Blvd., Steubenville.
Mirsky, I. Arthur, Major, 4 Lenox Lane, Cincinnati.
Nauman, John H., Col., 31 N. 4th St., Martins Ferry.
Northrup, Clarence E. II, Major, McConnelsville.
O'Dea, Frank J., Capt., 16201 Invermere, Cleveland.
Osmond, J. D. Jr., Capt., 3035 Euclid Hgts., Cleveland Hgts.
Patterson, R. J., 1st Lt., 240 E. McCreight Ave., Springfield.
Peabody, George A., Major, 2652 Exeter Rd., Cleveland Hgts.
Peerless, Julius, 1st Lt., 1860 Queen City Ave., Cincinnati.
Phillips, Clovis H., Major, 2310 Ardleigh Dr., Cleveland Hgts.
Piatt, Arnold D., Capt., 44 E. Church St., Columbus.
Pinkerton, Alfred W., Major, 1519 W. High St., Lima.
Pollack, David, Major, 391 Berkeley Rd., Columbus.
Raitano, Augustine J., Capt., 2665 E. 51st St., Cleveland.

Ohio—Continued

Romoser, William K., Capt., 1468 Wilson Ave., Columbus.
Scheetz, Maurice E., Capt., Kalida.
Seagrave, Gordon S., Lt. Col., Granville.
Shaw, Dudley J., Lt. Col., 165 Rosenberry St., Alliance.
Silver, Francis F., Capt., Children's Hosp., Akron.
Slusher, Robert G., Capt., St. Henry.
Snedden, Harold E., Capt., 3547 Rosedale Pl., Cincinnati.
Spring, William C., Major, Route 1, Concord.
Stuhlman, Byron C., Capt., 1829 E. 3d St., Dayton.
Swango, William R., Capt., 323 Park Ave., Ironton.
Tanno, Anthony M., Capt., 16210 St. Clair Ave., Cleveland.
Thompson, James E., Major, 930 Briar Ave., Wash. Ct. House.
Tims, Walter J., Major, 415 Cohassett Dr., Youngstown.
Williams, George J., Capt., 11311 Shaker Blvd., Cleveland.
Wood, Cyrus R., Lt. Col., 429 Monroe St., Port Clinton.
Wynsen, Henry J., Capt., 346 E. Ravenwood, Youngstown.
York, Dillard B. Jr., Major, University Hosp., Columbus.

Oklahoma

Buford, Elvin L., Capt., 1406 W. Main, Collinsville.
Carlock, John H. Jr., Major, 303 Gilbert Bldg., Ardmore.
Cook, Edward T. Jr., Major, 212 W. Central Blvd., Anadarko.
Hood, James O., Major, Norman.
Kahn, Robert W., Capt., 605 Euclid Ave., Lawton.
Kaiser, George L., Major, Muskogee.
Kendall, Robert L., Capt., Strong City.
Lawson, Patrick H., Lt. Col., Marietta.
McCollum, Wiley T., Capt., Gen. Del., Waynoka.
Miller, John E., Capt., 1616 W. 33d St., Oklahoma City.
Miller, Nesbett L., Lt. Col., Oklahoma City.
Perry, Fred T., Capt., Healdton.
Phelan, Ralph S., Capt., East D Ave., Waurika.
Prather, Frank W., Capt., Vet. Hosp., Sulphur.
Rubin, Herschel J., Major, Albany Hotel, Tulsa.
Schwartz Herbert N., Capt., 1340 S. Florence St., Tulsa.
Stowers, Aubrey E., Capt., Sentinel.
Taylor, Lewis C., Capt., 5917 N. W. 56th St., Oklahoma.

Oregon

Blair, Harry C., Lt. Col., 1258 NW Summitt Ave., Portland.
Chapman, William H., Lt. Col., Tiffany Bldg., Eugene.
Diack, Archibald W. Jr., Capt., 6617 S. E. 30th St., Portland.
Mason, Herbert E., Capt., Box 66, Beaverton.
Miller, Joseph L. Jr., Capt., 3424 S. E. Tolma St., Portland.
Miller, Vern W., Major, 1825 Fairmont St., Salem.
Woolcott, Floyd L. Jr., Capt., 408 N. Holland, Portland.

Pennsylvania

Anders, Wilbur D., Capt., Main & Highland Ave., N. Wales.
Ashman, Philip, Capt., Vintondale.
Bank, R. Stanley, 1st Lt., 2603 N. 2d St., Harrisburg.
Biederman, Albert M., Capt., 27 W. S. St., Wilkes-Barre.
Birkel, Benedict H., Capt., Bethlehem.
Blake, Paul O., Major, Lansdowne Ave., Lansdowne.
Blazina, William M., Capt., 1029 Vick St., McKeesport.
Block, Louis H., Capt., 926 Lindley Ave., Philadelphia.
Bloom, D. George, Major, 1077 McKinley Ave., Johnstown.
Boucek, John J., Capt., 3208 Perrysville Ave. N.S., Pittsburgh.
Brant, Carl E., Major, 451 Harrison Ave., Greensburg.
Bregman, Joseph, Capt., 1629 N. Franklin St., Philadelphia.
Brill, Francis W., Capt., 1318 Jackson, Scranton.
Broselow, D. D., Capt., 2833 W. Allegheny Ave., Philadelphia.
Buchert, J. G., 1st Lt., 2037 E. Allegheny Ave., Philadelphia.
Cambest, M. A. Jr., Major, 1670 New Haven Ave., Pittsburgh.
Caplan, Aaron, Major, 710 Park Ave., Ellwood City.
Chervinko, Joseph, Major, 309 Florida St., Farrell.
Claffey, John B., Capt., 606 N. 64th St., Philadelphia.
Cleaver, Edgar E., Major, Palm.
Clements, Harry H., Capt., 412 3d Ave., Altoona.
Cole, Jack E., Capt., Ave B and 1st St., Matamoras.
Croom, Arthur B., Capt., 4721 Walnut St., Philadelphia.
D'Alfonso, Anthony D., Major, 1208 Moore St., Philadelphia.
Davis, George B., Capt., 265 N. Maple Ave., Kingston.
de Prophetis, Nino, Major, 370 Parker St., Chester.
Dessen, Edgar L., Major, Jefferson Hosp., Philadelphia.
Dickinson, Daniel W., Capt., 5634 Stanton Ave., Pittsburgh.
Doering, John A., Major, 3616 California Ave., Pittsburgh.
Dohan, Francis C., Major, 80 Princeton Rd., Cynwyd.
D'Onofrio, Romeo R., Capt., 323 S. Broad St., Kennett Square.
Downey, Regis F., Major, Greensboro.
Dreier, Joseph F., Major, P. O. Box 30, Dushore.
Edmundson, Walter F., Capt., 5317 5th Ave., Pittsburgh.
Edwards, William C., Capt., 138 Wynoka St., Pittsburgh.

PHYSICIANS SEPARATED FROM SERVICE

Pennsylvania—Continued

Egbert, Ernest W., Major, 601 E. 13th St., Chester.
Engle, Rowland B., Major, 3220 Unruh Ave., Philadelphia.
Ervin, Kenneth D., Major, 114 York Rd., Jenkintown.
Everett, Harold E., Capt., 740 2d St., Catasauqua,.
Falcone, Benjamin L., Capt., 113 E. 4th St., Bridgeport.
Farber, Harold I., Capt., 521 N. 25th St., Reading.
Faust, Frederic B., Capt., 634 S. 52d St., Philadelphia.
Feick, Ralph H., Capt., 807 N. 10th St., Reading.
Fish, Henry, Major, 603 Prescott Ave., Scranton.
Fisher, Edward J., Capt., 807 Spruce St., Philadelphia.
Fister, Thomas R., Major, Fredericksburg.
Flowers, Claude J. B., Capt., 2541 Walnut St., Penbrook.
Flugel, Gerald N., Col., 73 W. Ross St., Wilkes-Barre.
Frantz, Robert R., Capt., 2139 S. 11th St., Philadelphia.
Fritchey, Thomas J., Capt., 1438 Market St., Harrisburg.
Froggatt, John W., Capt., 1744 Orthodox St., Philadelphia.
Garber, Jacob H. Jr., Capt., 320 S. Market St., Elizabethtown.
Gartman, Edward, Capt., 1409 Surrer La., Philadelphia.
German, John E., Capt., 1544 Perkiomen Ave., Reading.
Glick, Herbert D., Major, 1401 Centennial Ave., McKeesport.
Goldman, Louis H., Capt., Pennhurst State School, Pennhurst.
Goldman, Sidney S., Major, 517 S. 8th St., Philadelphia.
Goldsmith, Charles P., Capt., 718 Race St., Catasauqua.
Graybill, John G., Capt., Gen. Del., Dunbar.
Hanlon, Paul A., Capt., 160 N. Wyoming St., Hazelton.
Hankin, Samuel, Capt., Easton Rd., Warrington.
Hanna, Charles M., Major, 408 W. Mt. Airy Ave., Philadelphia.
Harasym, Emil L., Capt., 952 N. Franklin St., Philadelphia.
Hartnett, Eugene M., Capt., 722 Foss Ave., Drexel Hill.
Hawkins, Wilbur J. Jr., Capt., Fredericktown.
Hecker, Arthur O., Lt. Col., State Hosp., Harrisburg.
Hellesteen, Herman K., Capt., 35th & Curie St., Philadelphia.
Hermes, Richard L., Major, 21 Jefferson St., Bradford.
Heyl, Walter M., Major, 438 E. Durham St., Philadelphia.
Hicks, Harvard R., Major, 91 E. Ashland St., Doylestown.
Hildreth, Allen W., Capt., 207 Manantonho St., Pottsville.
Hogg, Harold K., Lt. Col., 802 N. Duke St., Lancaster.
Hoover, Carl H., Lt. Col., Lancaster.
Horvat, Arthur J., Major, 802 Main St., Duryea.
Hudson, Joseph C., Capt., Kenwood Rd., Chambersburg.
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ORGANIZATION SECTION

THE NATIONAL HEALTH ACT OF 1945

An Analysis Prepared by the Bureau of Legal Medicine and Legislation, American Medical Association

Immediately following the submission to the Congress by President Truman of his special message on health, November 19, Senator Wagner, for himself and Senator Murray, introduced S. 1606, a bill proposing to enact a National Health Act of 1945. It was referred, at his request, to the Senate Committee on Education and Labor, of which Senator Murray is chairman. The earlier bill introduced by these two Senators, S. 1050, was referred to the Senate Committee on Finance. A companion bill in the House, H. R. 4730, was also introduced the same day by Representative Dingell and referred to the House Committee on Interstate and Foreign Commerce, of which Representative Lea, California, is chairman. The earlier House bill, H. R. 3293, was referred to the House Committee on Ways and Means.

The new bill is seventy-eight pages in length as compared with 185 pages in the earlier bill. Provisions contained in S. 1050 but omitted in the new bill include thirty-one pages proposing a hospital building program, about two pages providing for child welfare services and approximately eighty pages proposing extended unemployment and disability benefits, retirement, survivors and extended disability benefits, social insurance contributions and special credits for military service.

The new bill contains two titles. Title I comprises three parts, Part A proposing grants to states for public health services, Part B proposing grants for maternal and child health services and for services for crippled children, and Part C proposing grants for the medical care of needy persons. Title II carries the caption "Prepaid Personal Health Service Benefits" and is not materially dissimilar, except for provisions for financing the program, from the comparable sections contained in S. 1050. The earlier bill proposed a tax, euphoniously referred to as a "contribution," on employees, employers and the self-employed to finance the compulsory sickness insurance program proposed by it. The new bill imposes no taxes. The program it contemplates, as will appear in more detail later, will be financed, at least as far as the present provisions of the bill are concerned, by appropriations from the general fund. By means of this technic, the sponsors apparently seek to by-pass the Senate Committee on Finance and the House Committee on Ways and Means, the two congressional committees which have jurisdiction over legislation to impose taxes.

TITLE I—GRANTS TO STATES FOR HEALTH SERVICES

This title contains three parts as follows:

Part A—Grants to States for Public Health Services

This part provides for grants to states for public health services and is similar to provisions that were contained in S. 1050. It continues without change the provisions in the Public Health Service Act relating to grants for tuberculosis and venereal disease control. It amends existing provisions relating to grants for public health work in a number of respects including the removal of the limitation on the amount of federal appropriations that may be made available annually, namely, $20,000,000. The details that a plan must contain to be approved are set forth specifically and the Surgeon General, in carrying out the duties imposed on him in relation to this part, is authorized and directed, with the approval of the Federal Security Administrator, to enter into such agreements or cooperative arrangements as may be necessary to insure coordination in the administration of programs and services under this part with those relating to grants to maternal and child health services, to crippled children services and to those contemplated under Title II of the bill.

A new definition of the term "public-health work" is proposed in the bill as follows:

"the term 'public-health work' includes customary and accepted functions, services, and activities of public-health agencies with respect to: public-health administration; training of personnel; vital statistics; sanitation of the human environment; control of communicable and preventable diseases; laboratory services; protection of health in maternity, infancy, and childhood; public-health education; public-health nursing; research and the performance of demonstrations; medical and related services for prevention or mitigation of sickness or disability and for the prevention of premature death; planning and coordination of health services and activities; enactment and enforcement of necessary standards and regulations; production or procurement, and distribution, of therapeutic and prophylactic preparations; and related matters. The term does not include: construction of hospitals, water supplies, sewerage or other waste-disposal systems, or of other facilities; operation or maintenance of hospitals (except hospitals for persons afflicted with infectious diseases), water supplies, sewerage or other waste-disposal systems; and related matters."

Part B—Maternal and Child Health Services

This part amends existing provisions in the Social Security Act relating to this subject. Under existing law $5,820,000 is the limit that may be appropriated annually for these services. The pending bill proposes to remove this limit. It provides that state plans must make available *facilities* for local maternal and child health services and that a plan must be in effect in all political subdivisions of the state not later than a date ten years after the date of approval of the first state plan approved under this part. A state plan must provide, too, for cooperation with medical, health, nursing, education and welfare groups and organizations and, when necessary, "for working agreements with any public agencies administering or providing services related to the services furnished under the State plan, including public agencies concerned with nursing, education, welfare, assistance, social insurance, workmen's compensation, labor, industrial hygiene, or medical care." The existing law specifies that a state plan must provide for the development of demonstration services in needy areas and among groups in special need. The reference to "needy areas and among groups in special need" will be eliminated by the bill. A state plan must provide, too, for the furnishing of services and facilities to "all mothers and children in the State or locality who elect to participate in the benefits of the program." The Children's Bureau would continue to be the administrative agency.

Services for Crippled Children

This section of the bill would amend the provisions in the Social Security Act relating to services for crippled children. It would relate not only to crippled children but to children otherwise physically handicapped. Here again the reference in existing law to rural areas and to areas suffering from severe economic distress would be eliminated.

Under existing law the annual appropriation that may be made available for services for crippled children is limited to the sum of $3,870,000. The bill would remove this limitation. A state plan, under the new provision in the bill, must be in effect in all political subdivisions of the state and the services and facilities must be made available to all crippled children not later than a date ten years after the date of approval of the first plan approved under this section. The bill would also provide for cooperation with the several groups as designated in the section of the bill relating to maternal and child health services. Also, the services and facilities under a state plan

must be made available to "all cripplied children in the State who elect to participate in the benefits of the program." A new formula is suggested for determining the amount of federal money that will be made available to the states under this part. At the present time federal moneys are made available on a fifty-fifty basis.

The Children's Bureau will be specifically directed to make and aid the financing of such studies, demonstrations, investigations and research as will promote the efficient administration and operation of programs under this part. In such administration, the Chief of the Children's Bureau will be required to pursue general policies established by her after consultation with advisory committees composed of professional and public members which she herself will appoint with the approval of the Secretary of Labor. These advisory committees, it is contemplated, will advise the Chief of the Children's Bureau on matters pertaining to the furnishing of the care and services. The Chief of the Children's Bureau will be required, too, to consult with a conference of the state health officers and in so far as practicable must obtain the agreement of the state authorities prior to the issuance of any general policies.

The Chief of the Children's Bureau will be directed, with the approval of the Secretary of Labor, to enter into such agreements or cooperative working arrangements with the Surgeon General of the Public Health Service and with the Social Security Board as may be necessary to insure coordination in the administration of programs and services administered by her with those under the part relating to grants for public health services and the part relating to grants to states for medical care of needy persons, the latter being a new provision in the bill.

An additional appropriation for the fiscal year ending June 30, 1946 of $5,000,000 will be authorized for the administrative expenses of the Children's Bureau and this appropriation may be used for studies, demonstrations, investigations and research, the training of personnel for federal, state and local services and the payment of salaries and expenses of personnel detailed to state agencies. Thereafter, so much will be authorized as necessary.

Part C—Grants to States for Medical Care of Needy Persons

In S. 1050, there was contained a part relating to a comprehensive public assistance program under which assistance was given to the states to aid needy individuals. This part has been modified so that it relates only to the supplying of medical care to such persons. For the fiscal year ending June 30, 1946 an appropriation of $10,000,000 will be authorized to enable each state to provide medical care for needy persons. Thereafter so much will be authorized as may be needed. In order to participate in this program, a state must submit plans for the approval of the Social Security Board. A state plan for medical care must—

(1) provide that it shall be in effect in all political subdivisions of the state, and if administered by them, be mandatory upon them;

(2) provide for financial participation by the state;

(3) provide for the establishment or designation of a single state public assistance agency to administer or supervise the administration of the plan;

(4) provide for granting to any individual whose claim for medical care is denied, an opportunity for a fair hearing;

(5) provide for such methods of administration as found by the Social Security Board to be necessary, including methods relating to the establishment and maintenance of personnel standards on a merit basis;

(6) provide for making reports to the Social Security Board;

(7) provide safeguards which restrict the use or disclosure of information concerning recipients; and

(8) provide that the state agency shall, in determining need for medical care, take into consideration (a) the requirements of individuals claiming medical care under the plan and (b) any income and resources of an individual claiming medical care under the plan.

If a state plan fulfils the required conditions, the Social Security Board will be required to approve it but the Board may not approve any plan which imposes as a condition of eligibility any citizenship or residence requirements or any requirement which excludes any recipient of public assistance under a state plan approved under the Social Security Act. A formula is proposed for the allotment of federal funds to the states that have plans approved by the federal agency.

In carrying out the duties imposed on it, the Social Security Board is directed, with the approval of the Federal Security Administrator, to enter into such agreements or cooperative working arrangements with the Surgeon General of the Public Health Service, and with the Chief of the Children's Bureau, as may be necessary to insure coordination in the administration of programs and services under this part with those under the part relating to grants to states for health services, the part relating to maternal and child health services and the title providing personal health service benefits.

The medical care to be furnished under this part may be provided either (1) by the state or local public assistance agency administering the plan through (a) money payments to individuals claiming such care, or (b) payments to persons or institutions furnishing such care, or (c) direct provision of such care; (2) in accordance with agreements, authorized in regulations by the Social Security Board, between such state or local agency and other agencies of the state or political subdivision thereof, by such other agencies; or (3) through arrangements by a state or local public agency with the Surgeon General for services furnished under Title II, on the basis of equitable payments to the Account established by that title; or (4) through such combination or modification of the foregoing as the Social Security Board may approve.

TITLE II—PREPAID PERSONAL HEALTH SERVICE BENEFITS

This title proposes to make available personal health service benefits to currently insured employees, to specified dependents of such employees, to individuals entitled to monthly benefits under Title II of the Social Security Act relating to old age and survivors insurance benefits, to the self-employed and to certain others. It follows closely the comparable provisions in S. 1050 and will be administered by the Surgeon General of the United States Public Health Service, under the supervision and direction of the Federal Security Administrator. He will be required to "consult" with the National Advisory Medical Policy Council on certain matters.

There will be created on the books of the Treasury Department a separate account to be known as the "Personal Health Services Account," and there will be authorized to be appropriated to this account such sums "as may be required to finance the benefits, payments, and reimbursements provided under this title." The bill, as now framed, does not indicate the method by which the sums so appropriated will be raised. Senator Wagner has indicated an intention to defer consideration of a method of financing until the Congress determines whether or not to provide the benefits contemplated by this title. In this connection, he caused to be inserted in the Congressional Record, at the time he introduced his bill, the following statement:

"A Nation-wide comprehensive prepayment medical-care plan can be financed in any one of several different ways. Premiums can, for such a purpose, be raised through income or general taxes or through pay roll contributions, or both. In either case minimum and maximum provision can be provided. The extent of a general governmental contribution out of general revenues to such a plan depends upon the comprehensiveness of the groups covered and the services provided. All in all, these problems are best decided after a decision has been reached on all the details of the medical-care plan itself. Moreover, the financial details relating to the raising of the revenue for the plan raises many special problems which have a bearing on existing income taxes and pay roll contributions and should be considered in relation to these laws.

"The bill does not, therefore, specify any particular method by which the sums authorized to be appropriated under section 212 of title II would be raised. Since under the Constitution legislation relating to the raising of revenue must originate in the House of Representatives, this matter has been left to separate legislation. There is already pending before the Congress legislation (H. R. 3293 and the companion bill S. 1050) which provides for the raising of revenue for personal health service benefits. This separation of legislation between the

revenue and benefit aspects of the program is in keeping with previous practice. In both 1935 and 1937 legislation relating to railroad retirement was considered and enacted in this way.

"It is both necessary and desirable that first and foremost consideration should be given to the benefits. If the Congress thinks that it is sound to provide prepaid medical care to the American people, the method of financing such a plan can be worked out jointly by the appropriate committees of the Congress which have jurisdiction over these matters."

Definitions

The following definitions contained in this title are identical with those contained in the earlier bill, S. 1050:

The term "personal health service benefits" is defined to include general medical benefits, special medical benefits, general dental benefits, special dental benefits, home nursing benefits, laboratory benefits and hospitalization benefits.

The term "general medical benefit" means services furnished by a legally qualified physician or by a group of such physicians, including all necessary services such as can be furnished by a physician engaged in a general or family practice of medicine, at the office, home, hospital or elsewhere, including preventive, diagnostic and therapeutic treatment and care, and periodic phyical examination.

The term "special medical benefit" is defined as necessary services requiring special skill or experience, furnished at the office, home, hospital or elsewhere by a legally qualified physician who is a specialist or consultant with respect to the class of service furnished, or by a group of such physicians, or by a group of physicians including such specialists or consultants.

The term "general dental benefit" is defined to mean services furnished by a legally qualified dentist or by a group of such dentists, including all necessary dental services such as can be furnished by dentists engaged in the general practice of dentistry, with or without the aid of an assistant or hygienist under his direction, and including preventive, diagnostic and therapeutic treatment, care and advice, and periodic examinations.

The term "special dental benefit" is defined to mean necessary services requiring special skill or experience, furnished at the office, hospital or elsewhere by legally qualified dentists (with or without the aid of an assistant, hygienist or anesthetist under his direction) who is a specialist or consultant with respect to the class of service furnished, by a group of such dentists, or by a group of dentists, including such specialists or consultants.

"Home nursing benefit" means nursing care of the sick furnished in the home by (1) a registered professional nurse or (2) a practical nurse who is legally qualified by a state or, in the absence of state standards or requirements, who is qualified with respect to standards established by the Surgeon General after consultation with the Advisory Council and with competent professional nursing agencies and who furnishes nursing care under the direction or supervision of the state health agency, the health agency of a political subdivision of a state or an organization supplying and supervising the services of registered professional nurses.

The term "laboratory benefits" means such necessary laboratory or related services, supplies or commodities as the Surgeon General may determine, including chemical, bacteriologic, pathologic, diagnostic and therapeutic x-ray and related laboratory services, refractions, and other ophthalmic services furnished by a legally qualified practitioner other than a physician, physical therapy, special appliances prescribed by a physician, and eyeglasses prescribed by a physician or other legalized practitioner. If any of the services, supplies or commodities covered by this definition are provided a hospitalized patient, or by a physician or dentist incidental to services rendered, payment therefor will be included in payments for hospitalization or for services furnished, respectively.

"Hospitalization benefit" is defined to mean an amount, as determined by the Surgeon General after consultation with the Advisory Council: not less than $3 and not more than $7 for each day of hospitalization not in excess of thirty days in a period of hospitalization, not less than $1.50 and not more than $4.50 for each day of hospitalization in excess of thirty days in a period of hospitalization, and not less than $1.50 and not more than $3.50 for each day of care in an institution for the care of the "chronic sick." In lieu of such compensation, the Surgeon General may enter into contracts with participating hospitals for the payment of the reasonable cost of hospital service at rates for each day of hospitalization neither less than the minimum nor more than the maximum applicable rates previously mentioned, such payment to be full reimbursement for the cost of essential hospital service, including the use of ward or other least expensive facilities compatible with the proper care of the patient.

Any such payment may be included in a contract between the Surgeon General and a participating hospital for inclusive services of a participating hospital and its staff or attending staff. Such payment will not affect the right of participating hospitals to require payments from patients with respect to the additional cost of more expensive facilities furnished for lack of ward facilities or occupied at the request of the patient, or with respect to services not included within a contract.

A hospital may become a "participating hospital" if it is an institution which provides all necessary and customary hospital services and is found by the Surgeon General to afford professional service, personnel and equipment adequate to promote the health and safety of individuals customarily hospitalized in such institutions. The Surgeon General may accredit a hospital for limited varieties of cases and may accredit an institution for the care of the "chronic sick," taking into account, for the purpose of such limited accrediting, the type and size of the community which the institution serves, the availability of other hospital facilities and such other matters as the Surgeon General may deem relevant.

National Advisory Medical Policy Council

A National Advisory Medical Policy Council will be created to consist of the Surgeon General as chairman and sixteen members appointed by him without regard to the Civil Service laws and subject to the approval of the Federal Security Administrator. The appointed members will be selected from panels of names submitted by professional and other agencies and organizations concerned with medical, dental and nursing services and education and with the operation of hospitals and laboratories and from among other persons, agencies or organizations informed on the need for or provision of medical, dental, nursing, hospital, laboratory or related services and benefits. The membership of the Advisory Council must include (1) medical and other professional representatives and (2) public representatives, in such proportions as are likely to provide fair representation to the principal interested groups that furnish and receive personal health services, having regard for the functions of the Advisory Council.

Appointed members will hold office for four years, with terms of office staggered, and will receive compensation at a rate not to exceed $25 a day for the time spent on official business with the Council plus actual and necessary traveling expenses. The Council will be required to meet not less frequently than twice a year and whenever at least four of the members request a meeting. The Advisory Council will advise the Surgeon General with reference to questions of general policy and administration in carrying out the provisions of Title II including (1) professional standards of quality to apply to personal health service benefits; (2) designation of specialists and consultants; (3) methods and arrangements to stimulate and encourage the attainment of high standards through the services of general or family practitioners, specialists and consultants, laboratories and other auxiliary services, and through the coordination of the services of physicians and dentists with those of educational and research institutions, hospitals and public health centers, and through other means; (4) standards to apply to participating hospitals, to the relations or coordination among hospitals and to the establishment and maintenance of the list of participating hospitals; (5) adequate and suitable methods and arrangements of paying for personal health service benefits; (6) studies and surveys of personal health services and of the quality and adequacy of such services; and (7) grants-in-aid for professional education and research projects. The Advisory Council will be required to establish special advisory, technical, regional, or local committees or commissions whose membership may include members of the Council or other persons or both, to advise on

general or special questions, professional and technical subjects, questions concerning administration, problems affecting regions or localities, and related matters.

Selection of Physicians; Acceptance of Patients; Panels

The Surgeon General will be required to publish and otherwise make known in each local area to individuals entitled to benefits the names of medical and dental practitioners and groups of practitioners who agree to furnish services as benefits and to make such lists of names readily available to individuals entitled to benefits. Such lists must include general or family practitioners and qualified specialists and consultants. With respect to qualified specialists and consultants the lists must indicate the class or classes of specialist or consultant services for which each has been qualified. Any physician, dentist or nurse legally qualified by a state to furnish any services included as personal health service benefits will be legally qualified to furnish such benefits, including any group of physicians, dentists or nurses or combinations thereof whose members are similarly qualified.

Likewise a beneficiary may select any practitioner appearing on a panel to treat him subject to the consent of the practitioner or the group of practitioners, as the case may be. This freedom of choice of practitioner is conditioned, however, on the right of the Surgeon General, "in order to maintain high standards in the quality of services furnished as medical or dental benefit," to prescribe maximum limits to the number of potential beneficiaries for whom a practitioner or group of practitioners may undertake to furnish services, and such limits may be nationally uniform or may be adapted to take account of "relevant factors." Every beneficiary and every group of beneficiaries will be permitted to make selection of a practitioner through a representative of his or its own choosing.

The services of specialists or consultants will ordinarily be available only on the advice of the general or family practitioner or of a specialist or consultant attending the individual. Such services will also be made available "when requested by an individual entitled to specialist and consultant services as benefits and approved by a medical administrative officer appointed by the Surgeon General."

The Surgeon General will designate what shall constitute specialist or consultant services. He will likewise determine who are qualified to render such services, in accordance with general standards prescribed by him after consultation with the Advisory Council. In establishing standards and in designating specialists and consultants, the Surgeon General will be required, "as far as is consistent with the purposes of this title," to "utilize standards and certifications developed by competent professional agencies" and must "take into account the personnel resources and needs of regions and local areas."

Payments for the Services of Practitioners

Payments to general medical and family practitioners or to general dental practitioners may be made (1) on the basis of fees for services rendered, according to a fee schedule, (2) on a per capita basis, the amount being according to the number of individuals entitled to benefits who are on the practitioner's list, (3) on a salary basis, full time or part time or (4) on a combination or modification of these bases, as the Surgeon General may approve. The method of payment will apparently be determined in each local area as the majority of the general medical and family practitioners or of the general dental practitioners, respectively, may elect. The Surgeon General may also make payments by another method from the one selected in a local area to those general medical and family practitioners or general dental practitioners who do not elect the method designated by the majority. Any of the methods of making payments indicated in the foregoing may be used, as the Surgeon General may approve, in making payment to groups of practitioners that contain designated specialists or consultants as well as general or family practitioners. The Surgeon General may negotiate agreements or cooperative working arrangements to utilize inclusive services of hospitals and their staffs or attending staffs and may enter into contracts for such inclusive services.

Payments to designated specialists and consultants may be made on the basis of salary (whole time or part time), per session, fee for service, per capita or other basis or combination, as the Surgeon General and the specialists and consultants may agree.

Rates or amounts of payment for particular services or classes of services may be nationally uniform or may be adapted to take account of relevant regional or local conditions and other factors. Payments shall be adequate, "especially in terms of annual income or its equivalent and by reference to annual income customarily received among physicians, dentists and nurses, having regard for age, specialization and type of community." Payment will be commensurate with skill, experience and responsibility involved in furnishing service. In any local area where payment for services of a general or family practitioner is only on a per capita basis, the Surgeon General, the bill proposes, shall make per capita payments on a pro rata basis among the practitioners and groups of practitioners of the local area on the panel with respect to those individuals who after due notice have failed to select a general or family practitioner or who, having made one or more successive selections, have been refused by the practitioner or practitioners selected.

In each local area the provision of general medical or dental benefits will be a collective responsibility of all qualified general medical or family practitioners or of all qualified general dental practitioners, respectively, in the area who have undertaken to furnish such benefits.

Home Nursing Benefits

The bill provides that home nursing benefits shall ordinarily be available only on advice of a legally qualified attending physician but must be made available also when requested by an individual entitled to the benefits and when approved by a medical officer designated by the Surgeon General. The method to be used in paying for home nursing services is not clear.

List of Participating Hospitals

The Surgeon General is directed to publish a list of institutions which he finds to be participating hospitals in accordance with general standards prescribed by him after consultation with the Advisory Council. Any institution which is not included in the list, or any institution having been removed from the list, may petition the Surgeon General for a hearing. The bill provides that the Surgeon General shall exercise no supervision or control over a participating hospital unless it is owned or leased and operated by the United States. No requirement for participation by a hospital may prescribe its administration, personnel or operation.

Limitations on General Medical, General Dental, Home Nursing and Laboratory Benefits

The Surgeon General, after consultation with the Advisory Council and subject to the approval of the Administrator of the Federal Security Agency, may determine that every individual entitled to general medical, general dental or home nursing benefits may be required by the physician, dentist or nurse attending him to pay a fee with respect to the first service or with respect to each service in a period of sickness or course of treatment if he believes that such a limitation is necessary and desirable to prevent or reduce abuses of entitlement to the benefits. The maximum amount of such fee will be fixed by the Surgeon General after consultation with the Advisory Council and with the approval of the Administrator of the Federal Security Agency. He may also limit the application of such fees to home calls, to office visits or to both.

The Surgeon General, "having regard for the adequacy of available personnel," may, after consultation with the Advisory Council and with the approval of the Administrator of the Federal Security Agency, restrict the content of the general dental, special dental or home nursing benefit. On and after July 1, 1947, however, the restricted content of the general dental or special dental benefit must include at least (1) examination (including x-rays) and diagnosis, (2) prophylaxis, (3) extraction of teeth which are considered by the dentist and an attending physician to be or likely to be injurious to the gen-

eral health of the individual and (4) treatment of acute diseases of the teeth, their supporting structures and adjacent parts, including fractures of the teeth or jaw. He may also fix an age above which the restriction on content shall apply.

As to the home nursing benefits, restriction of content may limit the service to part time care on an hourly or visit basis or may limit the types of cases for which such benefits shall be available, or the maximum amount of service per case, or otherwise.

The maximum number of days in any benefit year for which an individual may be entitled to hospitalization will be sixty. This maximum may be increased to not more than one hundred and twenty days in a calendar year if funds are adequate.

No application for hospitalization benefits will be valid with respect to any day of hospitalization if filed more than ninety days after such day, or with respect to any day of hospitalization more than thirty days following the diagnosis of tuberculosis or psychosis, or with respect to any day in a hospital or other institution for mental or nervous disease or tuberculosis.

Likewise the Surgeon General, after consultation with the Advisory Council and with the approval of the Federal Security Administrator, may limit for any calendar year or part thereof the cost of laboratory benefits. Such limitation may relate to a class of services, supplies or commodities, to maximum payments per beneficiary in a benefit year, to a specified fraction of the cost or to combinations thereof.

Proposed Method of Administration

The bill provides that the Surgeon General shall perform the duties imposed on him under the supervision and direction of the Federal Security Administrator and after consultation with the Advisory Council as to questions of general policy and administration. He will be authorized to take all necessary steps to arrange for the availability of the benefits provided. He will be directed, after consultation with the Advisory Council as to questions of general policy and administration and with the approval of the Administrator to negotiate and periodically to renegotiate agreements or cooperative working arrangements with appropriate agencies of the United States, or of any state or political subdivision, and with other appropriate public agencies. He may, too, make such agreements or arrangements with private persons or groups of persons to utilize their services and facilities and to pay fair reasonable and equitable compensation therefor. He may negotiate and periodically renegotiate agreements or cooperative working arrangements for the purchase or availability of supplies and commodities necessary for the benefits provided in the bill and to enter into contracts for such services, facilities, supplies and commodities. He will be specifically directed, with the approval of the Federal Security Administrator, to enter into such agreements or cooperative working arrangements with the Chief of the Children's Bureau and with the Social Security Board as may be necessary to insure coordination in the administration of programs and services under Title IV with those under parts B and C of Title I.

Except with respect to state or local areas for which other arrangements have been made, the Surgeon General will be directed to appoint local area committees to aid in the administration of Title II. The members of such committees must be selected from panels of names submitted by the professional and other organizations concerned with medical, dental and nursing services and education and with the operation of hospitals and laboratories, and from other persons, agencies or organizations informed on the need for or provision of medical, dental, nursing, hospital, laboratory, or related services and benefits. The membership of such committees must include (1) medical and other professional representatives, and (2) public representatives in such proportions as are likely to provide fair representation to the principal interested groups that furnish and receive personal health services, "having regard for the functions of the local area committees." Such committees, the bill provides, must be consulted at frequent intervals and must be kept informed by the local area officers of the Public Health Service with respect to arrangements for the availability of benefits and policies to be followed. Provision is made for the appointment of similar committees by each state or local cooperating department or agency.

The Surgeon General will be directed to give priority and preference to utilizing the facilities of state and local departments or agencies on the basis of mutual agreements with such departments or agencies. He may delegate to any officer or employee of the United States Public Health Service or of any federal, state or local cooperating department or agency such of his powers and duties, except the prescribing of rules and regulations, as he may consider necessary and proper. He may, after consultation with the Social Security Board, after consultation with the Advisory Council as to questions of general policy and administration, and with the approval of the Federal Security Administrator, prescribe and publish such rules and regulations and require such records and reports, not inconsistent with other provisions of the bill, as may be necessary. Authorization is given for the appointment of such additional personnel in the Public Health Service as is necessary to administer Title II.

The Surgeon General will be required to make a full report to Congress, at the beginning of each regular session, of the administration of the functions devolved on him by the bill, and such reports must include "a record of consultation with the Advisory Council, recommendations of the Advisory Council, and comments thereon."

The bill suggests that the methods of administration, including the methods of making payments to practitioners, shall (1) include the prompt and efficient care of individuals entitled to personal health service benefits; (2) promote personal relationships between physician and patient; (3) provide professional and financial incentives for the professional advancement of practitioners and encourage high standards in the quality of services furnished as benefits; (4) aid in the prevention of disease, disability and premature death; and (5) insure the provision of adequate service with the greatest economy consistent with high standards of quality.

Grants-in-Aid for Medical Education, Research and Prevention of Disease and Disability

The Surgeon General will be authorized to administer grants-in-aid to nonprofit institutions and agencies engaging in research or in undergraduate or postgraduate professional education. Such grants will be made with respect to each project (1) for which application has been received from a nonprofit institution or agency, stating the nature of the project and giving the reasons for the need of financial assistance in carrying it out, and (2) for which the Surgeon General finds, with the advice of the Council and after consultation with other federal departments and agencies concerned with research or professional education that the project shows a promise of making valuable contributions to the education or training of persons useful to or needed in the furnishing of medical, dental, nursing, hospital, laboratory, and related benefits, or to human knowledge with respect to the cause, prevention, mitigation or method of diagnosis or treatment of disease and disability.

The Surgeon General and Advisory Council must give preference and priority, during the five year period beginning Jan. 1, 1946, to grants-in-aid with respect to projects to aid servicemen seeking postgraduate education as medical or dental practitioners or training for administration of personal health services, disability benefits, rehabilitation services and related services.

To finance this part of the program, there will be made available for the calendar year 1946 the sum of $10,000,000, for the calendar year 1947 the sum of $15,000,000 and for each calendar year thereafter an amount equal to 2 per cent of the amount expended for benefits under Title II in the last preceding fiscal year.

Existing Prepayment Plans

Senator Wagner reiterates the belief that S. 1606 will not necessarily result in the displacement of existing prepayment medical service and hospitalization plans.

The bill itself, however, does not specifically mention existing prepayment medical service and hospitalization plans. It does direct the Surgeon General, after consultation with the Advisory Council as to questions of general policy and administration, and with the approval of the Federal Security Administrator, to make agreements or arrangements with private agencies or institutions, or with private persons or groups of persons, to utilize their services and facilities.

Miscellaneous Provisions

Sections in the new bill, similar to those in S. 1050, (1) exempt from entitlement to benefits persons entitled to such benefits under workmen's compensation acts, (2) provide for extension of benefits to certain noninsured persons, (3) contemplate additional dental, nursing and other benefits, and (4) make benefits available to certain persons not at present within the social security system, such as employees of designated exempt organizations.

Washington Letter

(From a Special Correspondent)

Nov. 26, 1945.

Artificial Limb Firms Accused of Conspiracy

Assistant Attorney General Wendell Berge presented to a District of Columbia grand jury an indictment charging the Association of Limb Manufacturers of America, forty-five corporations and thirty-four individuals representing 75 per cent of the United States artificial limb industry, with conspiracy to fix high and unreasonable prices for artificial limbs sold to war veterans. The indictment, charging violation of the Sherman Antitrust Act, was promptly voted and returned in District of Columbia court. The indictment charges manufacturers with agreeing to fix minimum and noncompetitive prices in bids submitted to the Veterans Administration on artificial arms and legs supplied to veterans. The manufacturers are also charged with conspiring to fix identical prices to state agencies and agreeing that suppliers of artificial limb parts would refuse to sell to governmental agencies and charitable, public or private institutions that supplied artificial limbs to amputees without cost. Mr. Berge said that a substantial number of the 900,000 artificial limb wearers in the United States are war veterans. He stated that in peacetime about 25,000 amputations occur annually. The indictment says that a total annual sales volume of about $10,000,000 in artificial limbs is divided among some 250 manufacturers having production capacity of from 15 to 1,500 annually.

Chairman Augustine B. Kelley, Democrat of Pennsylvania, of the House subcommittee on aid to the physically handicapped, said his committee had asked the Justice Department to make the investigation which resulted in the indictment. Further, he stated, it is at his committee's request that the Federal Trade Commission will meet with members of the Association of Limb Manufacturers of America on December 1 in Chicago to set up a "code of ethics" in advertising and salesmanship.

Political Pressure in Veterans' Hospital Sites

The first indication of opposition to Gen. Omar N. Bradley's plan to set up new Veterans Administration hospitals where they will do the most good for veterans rather than where it is expedient for political or geographic patronage has been revealed. Senator Elmer Thomas, Democrat of Oklahoma, has sent a virtual "ultimatum" to General Bradley requesting that the veterans agency take over the 750 bed Glennan Army Hospital at Okmulgee, Okla., which is being closed in the next few days. In taking a stand against "pork barrel politics," said to have been a major factor in the location of veterans' hospitals under the régime of former Veterans Administration Director General Hines, both General Bradley and his acting surgeon general, Major Gen. Paul R. Hawley, have repeatedly emphasized that the interest of the veterans comes first. Their policy calls for setting up new major hospitals in or adjacent to large urban centers so that veterans' hospitals can take advantage of teaching facilities and faculties of large medical centers.

Salaries of $12,000 to $15,000 Proposed for Scientists

Dr. Vannevar Bush, director of the Office of Scientific Research and Development, told the Senate Civil Service Committee that two new scientific classifications should be set up in civil service, one for salaries from $12,000 to $14,000 a year and the other for $15,000. Endorsing the federal pay raise bill, he said these salaries were necessary to attract scientists to maintain "adequate preparedness on a scientific basis." Even on this basis, he said, the government would be paying less than industry for scientific workers doing comparable tasks.

Return of Doctors and Dentists from the Armed Forces

Coincident with the announcement of Secretary of War Patterson that an immediate investigation would be made into the need for doctors and dentists now in the Army, Major Gen. Norman T. Kirk, Surgeon General of the Army, announced that the Army expects to discharge all but 11,000 doctors by next June. General Kirk said that keeping doctors in service now is required by the fact that there will be some 220,000 patients still in U. S. Army hospitals as of January 1. By that date he expects that some 14,000 doctors, which is more than one third the number of doctors in the Army Medical Corps at peak strength, will have returned to civilian practice. Mr. Patterson's promise of an inquiry in regard to the number of doctors and dentists now held in service came in response to a charge by Senator Reed, Republican of Kansas, that the Army is holding these men unnecessarily. Army medical officers will continue to be released under previously announced standards, but a further announcement concerning them will be forthcoming around mid-December.

Army Prosthetics Program

Following indictment of national artificial limbs concerns for alleged violation of antitrust laws, the War Department released findings of three specialists who praised the army prosthetics program. They ridiculed charges made in and out of Congress that the Army had supplied limbs of "cheapest" possible construction and declared that amputees get the most costly types obtained from civilian shops. The report was made by a civilian consultant committee composed of Dr. Harold Conn, Akron, Ohio, Dr. Paul B. Magnuson, associate professor of surgery, Northwestern University Medical School, Chicago, and new chief of the Veterans Administration Research Section, and Dr. Philip D. Wilson, clinical professor of orthopedic surgery, Columbia University College of Physicians and Surgeons, New York.

Tuberculosis Rate Among Veterans Reported Very High

Mrs. Elizabeth H. Breeze, Veterans Administration nurse recruitment specialist, said that a "very high" tuberculosis rate among returning veterans has caused a dangerous situation through the lack of nurses trained for the treatment of tuberculosis. She said the percentage of veterans infected with tuberculosis is higher than one ever imagined, revealing that only 12 out of 2,000 nurses queried have shown an interest in the care of tuberculous patients or said they had any training for it.

River Pollution Discussed by House Rivers and Harbors Committee

The annual appropriation of $100,000,000 to purify the nation's rivers was discussed Tuesday when the House Rivers and Harbors Committee considered a bill sponsored by Representative Spence, Democrat of Kentucky, providing for a water pollution advisory board under the jurisdiction of the U. S. Public Health Service, and agreements between states to prevent dumping of waste and sewage into rivers. Under the Spence bill the U. S. Public Health Service would be empowered to take cases to court when nuisances were not abated.

Senate Committee Reports Favorably on Federal Health Programs

The Senate Civil Service Committee has reported favorably on the Randolph bill to set up health programs in government agencies. Sponsored in the House by Representative Randolph, Democrat of West Virginia, the measure would authorize agencies to establish health services and clinics after consultation with the U. S. Public Health Service. Benefits would be limited to treatment of minor illnesses. An amendment by Senator Hickenlooper, Republican of Iowa, would bar health units where there were only a few workers.

Returning Veterans Urged to Become Pharmacists

A reported shortage of 8,000 for jobs in the field of pharmacy was cited by Dean W. P. Briggs of George Washington University School of Pharmacy to back up his appeal to returning servicemen to consider careers in pharmacy.

Walter Bura Heads Veterans Prosthetic Appliance Service

Walter Bura, 31, retired engineer who lost his leg above the knee in a diving accident five years ago, has been appointed director of the Veterans Administration prosthetic appliance service. He is credited with "revolutionizing" the Army's artificial limb program. He claims that artificial limbs made today are good but that amputees have not been taught how to use them.

Child Care Centers to Operate Until March 1

A Senate appropriations subcommittee has approved, without opposition, expenditure of $5,415,000 to operate wartime child care centers for another four months. The Federal Works Agency had planned to close the centers October 31, but mothers of the nation raised such a protest that President Truman asked Congress to allow the centers to operate pending study of their need in peacetime.

Licensing of Practical Nurses Proposed

A bill submitted by Charles D. Drayton, attorney for the Graduate Nurses Association, would require all men and women engaged in any form of practical nursing assistance to obtain a $10 a year license from the Nurses' Examining Board. The bill was rejected some months ago by the District of Columbia commissioners, but a hearing has been ordered to get the opinions of all interested persons.

Bill Would Provide Seeing-Eye Dogs for Blinded War Veterans

Senator Wagner, Democrat of New York, has introduced an amendment to a bill providing for purchase and training of seeing-eye dogs that would provide these dogs to all war blinded veterans before their discharge.

Official Notes

APPLICATIONS FOR GRANTS TO AID IN CLINICAL RESEARCH

The Committee on Scientific Research of the American Medical Association invites applications for grants of money to aid in research in problems bearing more or less directly on clinical medicine. Preference is given to requests for moderate amounts to meet specific needs. As a rule grants are not made for the purchase of equipment or apparatus of a permanent nature. For application forms and further information, please address the committee at 535 North Dearborn Street, Chicago 10.

ANNUAL CONGRESS ON MEDICAL EDUCATION AND LICENSURE

The Forty-Second Annual Congress on Medical Education and Licensure will be held on Monday and Tuesday, Feb. 11 and 12, 1946 at the Palmer House in Chicago. Monday's session will deal primarily with problems in medical education at the undergraduate, graduate and postgraduate levels. Tuesday will be devoted mainly to questions of licensure. It is imperative that hotel reservations be made at once.

Coming Medical Meetings

American Medical Association House of Delegates, Chicago, Dec. 3-6. Dr. Olin West, 535 N. Dearborn St., Chicago 10, Secretary.

American Academy of Allergy, Chicago, Dec. 10-11. Dr. Karl D. Figley, 316 Michigan St., Toledo 2, Ohio, Secretary.

American Society of Anesthetists, New York, Dec. 12-13. Dr. McKinnie L. Phelps, 745 Fifth Ave., New York 22, Secretary.

International College of Surgeons, U. S. Chapter, Washington, D. C., Dec. 7-8. Dr. Louis J. Gariepy, 16401 Grand River Avenue, Detroit, Secretary.

Puerto Rico, Medical Association of, San Juan, Dec. 14-16. Dr. Rafael A. Vilar, P. O. Box 3866, Santurce, Secretary.

Southern Surgical Association, Hot Springs, Va., Dec. 4-6. Dr. Alfred Blalock, Johns Hopkins Hospital, Baltimore 5, Secretary.

Medical Legislation

MEDICAL BILLS IN CONGRESS

National Health Act of 1945

Senator Wagner, New York, for himself and Senator Murray, Montana, has introduced S. 1606, proposing to enact a National Health Act of 1945. A companion bill was introduced in the House by Representative Dingell, Michigan, H. R. 4730. This legislation is analyzed in detail in this issue of THE JOURNAL. It proposes additional grants to the states for public health services, for maternal and child health services and for services for crippled children. In addition, it proposes grants to states for medical care of needy persons and provides for prepayment personal health service benefits.

Veterans Administration

After extended hearings on the bill introduced, by request, by Representative Rankin, Mississippi, H. R. 4225, to establish a Department of Medicine and Surgery in the Veterans Administration, the House Committee on World War Veterans' Legislation has caused to be introduced a new bill, H. R. 4717, which has now been reported to the House with recommendation that it pass. Among other things, the new bill would eliminate the provision in the original bill with respect to the creation of the several corps and would provide that the Department of Medicine and Surgery shall include a Chief Medical Director, Medical Service, Dental Service, Nursing Service and Auxiliary Service. The Chief Medical Director and the Deputy Medical Director must be qualified doctors of medicine. Apparently all other medical personnel of the Department of Medicine and Surgery must hold either the degree of doctor of medicine *or doctor of osteopathy*, thereby specifically authorizing the utilization of osteopathic services in connection with the treatment of veterans.

President Truman has submitted a supplemental estimate of appropriation for the Veterans Administration in the amount of $158,320,000 to permit the completion of the hospital construction program for the fiscal year 1946 "providing approximately 14,100 additional hospital beds and to make possible the undertaking of the additional construction program for the fiscal year 1946 providing approximately 15,500 additional hospital and domiciliary beds" (H. Doc. 345).

A bill introduced by Representative Hedrick, West Virginia, H. R. 4679, provides compensation for veterans of World War II who have had pulmonary tuberculosis.

Miscellaneous

Senator Reed, Kansas, has submitted S. Res. 184, requesting the Secretary of War to appoint a board to make inquiry into the demobilization of physicians and dentists.

H. R. 4564, introduced by Representative Robinson, Utah, would authorize the Secretary of War to convey certain land situated within the Fort Douglas Military Reservation to the Shriners' Hospitals for Crippled Children.

An appropriation of $1,000,000,000 for each of three fiscal years would be authorized by H. R. 4151, introduced by Representative Stigler, Oklahoma, to be used by the Federal Works Administrator in making loans and grants to public agencies for public works projects, including hospitals and nurses' homes.

The bill providing for a health program for government employees, H. R. 2716, has been reported to the Senate with amendments.

District of Columbia

Representative Hebert, Louisiana, has introduced H. R. 4456, to regulate the practice of optometry in the District of Columbia. This bill would declare optometry to be a learned profession and would define it "as the science and art devoted to the examination of the eyes, the analysis of the ocular functions and the employment of lenses, prisms, ocular exercises, visual training, orthoptics, preventive or corrective optometric methods, and agents for the relief of visual and ocular anomalies."

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

CALIFORNIA

Housman Denied License.—The state board of medical examiners, at its meeting in Sacramento October 17, denied the restoration of his license to practice medicine in California to Dr. Nathan S. Housman, San Francisco. The physician's license had been revoked after he was convicted of keeping improper narcotic records and of perjury in his testimony at the trial (THE JOURNAL, February 10, p. 345).

Changes in Health Personnel.—Dr. George F. O'Brien, Sacramento, has been appointed health officer of Stanislaus County to succeed Dr. J. Lyle Spelman, Cenes, resigned.—— Dr. Martin Karr, San Mateo, has been employed as medical officer in the bureau of maternal and child health and assigned to the bureau of vocational rehabilitation, state department of education, where he will give assistance in developing the new physical restoration program of that agency along the lines of the medical care programs of the department of public health.

Refresher Course in Psychiatry.—Beginning January 7, a refresher course in psychiatry for physicians returning from military service will be offered at the Langley Porter Clinic, University of California Medical School, San Francisco. Instruction will be given under the direction of Dr. Karl M. Bowman, professor of psychiatry, at the University of California Medical School, with the assistance of staff members from other divisions of the medical school. Subjects to be covered will include general psychiatry, functional and organic psychoses, psychoneuroses, therapy, psychosomatic problems, neuroanatomy, clinical neurology, neuropathology, x-ray diagnosis, and other related topics. Registration is open to graduates of approved medical schools with nine months' general internship. Preference will be given to applicants with training in psychiatry, to those preparing for examination of the American Board of Psychiatry and Neurology, to graduates of the University of California Medical School, and to legal residents of the state of California. Immediate application for registration is recommended because of the limited enrolment which can be accommodated. Application should be made by letter containing the following information: place of legal residence, medical school attended and date of graduation, experience and training, with special details regarding psychiatric training and record of military service. Additional information may be obtained from University Extension, University of California, 540 Powell Street, San Francisco 2.

CONNECTICUT

Personal.—Dr. James S. Martin has retired as physician at the Taft School, Watertown, after thirty-nine years of service, according to the New York *Times*.

Cancer Grants.—The total of $41,835 has been made available by the Connecticut Cancer Society to hospitals and communities in Connecticut to aid in the development and expansion of local cancer control programs. The grants will be used for clinical research in hospitals of the state and for specialized nursing and social work personnel. The medical advisory committee of the society considers each request for funds, and allotments are made only for those projects which this committee approves.

Physicians on Board for Inebriates.—Dr. Thomas P. Murdock, Meriden, formerly president of the Connecticut State Medical Society, and Dr. Arthur H. Jackson, Waterbury, are the physician members of newly appointed board of trustees of the Connecticut State Fund for Inebriates. According to an announcement, Connecticut is the first state to enact "sound legislation for the study, care and treatment of alcoholics and to provide for the creation of a board which is authorized to make a study of the problem of alcoholism, to make its findings public, to set up diagnostic and rehabilitation centers and to conduct outpatient clinics." The program will be financed by a fund to which will revert 9 per cent of all income from liquor license permits. Selden D. Bacon, Ph.D., of the department of sociology and the School of Alcohol Studies, Yale University, is chairman of the board, and the remaining members are Mrs. Edna A. F. Edgerton, representative in the state legislature, and Abraham S. Ullman, state's attorney in New Haven.

DISTRICT OF COLUMBIA

Wallace Yater Resigns from Georgetown.—Dr. Wallace M. Yater, formerly chairman of the Section on Experimental Medicine and Therapeutics of the American Medical Association, has resigned as professor and director of the department of medicine at Georgetown University School of Medicine, Washington. Dr. Yater, who has been editor of the *Medical Annals of the District of Columbia* since its inception in 1932, has been associated with Georgetown for many years, serving the last fifteen as professor. He is also retiring as head of the department of medicine at Georgetown University Hospital and of Gallinger Municipal Hospital.

GEORGIA

Pediatric Meeting.—The Georgia Pediatric Society will hold its annual meeting in Atlanta, December 13. Among the speakers will be Drs. Carl H. Smith, New York, on "The Recognition of the Mild Case of Mediterranean (Cooley's) Anemia"; Helen B. Taussig, Baltimore, "The Management of Patients with Acute Rheumatic Fever," and Ernest C. Faust, Ph.D., New Orleans, "Diagnosis and Treatment of the Intestinal Parasites of the Southern Child." The secretary of the Medical Association of Georgia, Dr. Edgar D. Shanks, Atlanta, and the president of the Fulton County Medical Society, Dr. Joseph C. Massee, both of Atlanta, will speak.

Faculty Changes at Emory.—Dr. William C. Warren, associate professor of clinical otorhinolaryngology and chief of the clinical department, Emory University School of Medicine, Atlanta, has been appointed professor of otology and rhinolaryngology and chairman of the department to succeed Dr. James C. McDougall. Dr. Robert M. Paty, Porterdale, has been named professor of surgery and acting head of the department. He will continue as associate dean of the medical school. Dr. Russell Oppenheimer, who recently retired as dean of Emory University School of Medicine, Atlanta, has returned to the school after a three months leave to take over his activities as full time professor of clinical medicine. Dr. Francis P. Parker has returned to the school as assistant professor of pathology, the position which he held prior to entering military service three years ago.

ILLINOIS

Society Breaks Ninety-Nine Year Old Precedent.—For the first time in the ninety-nine years of the Aesculapian Society of Wabash Valley, the group met for its annual meeting elsewhere than in Paris. The meeting was held in Danville October 25. Among the speakers were Drs. Arthur R. Brandenberger, Danville, on "The Use and Abuse of Penicillin," and John T. Belting, Charleston, on "Indications and Some Technics for Open Reductions of Fractures."

Chicago

Implications of the Atomic Bomb.—Capt. Edward L. Bortz (MC), U.S.N.R., will discuss "Implications of the Atomic Bomb" before the North Side Branch of the Chicago Medical Society, December 6, in the Drake Hotel.

Personal.—Dr. Max Cutler, director of the Chicago Tumor Institute, has been named an honorary member of the Cuban Radiological Society.——Dr. Frederick Tice has resigned as president of the board of directors of the City of Chicago Municipal Tuberculosis Sanitarium.

Annual Meeting of Institute of Medicine.—Dr. William C. Danforth, professor of obstetrics and gynecology, Northwestern University Medical School, will deliver the presidential address before the thirtieth annual meeting of the Institute of Medicine of Chicago, December 4, in the Grand Ball Room of the Palmer House. His subject will be "The Beginnings of Asepsis: The Story of a Tragic Life."

Research Fellowships at Illinois.—The Graduate School of the University of Illinois has established four research fellowships to be awarded for one year in the fields of medicine, dentistry and pharmacy at a stipend of $1,200 a year (calendar year with one month's vacation). Fellows are eligible for reappointment in competition with the new applicants. Candidates should indicate the field of research in which they are interested and submit complete transcripts of their scholastic credits, together with the names of three former

science teachers as references. Appointments will be announced January 1 or soon thereafter each year. The fellowship year begins September 1. Formal application blanks may be secured from the secretary of the Committee on Graduate Work in Medicine, Dentistry and Pharmacy, 1853 West Polk Street, Chicago 12.

KENTUCKY

Bas Relief of Dr. McCormack.—The bas relief of the late Dr. Arthur T. McCormack, for many years secretary of the Kentucky State Health Department and of the state medical association, was exhibited during the recent meeting of the state association. The bronze is the work of Dr. Waller O. Bullock, Lexington, and matches the bronze of Dr. Joseph N. McCormack, father, also a physician who aided in organization of the state board of health, serving as secretary for many years. It will be placed in the State Health Department Building at Louisville as a gift of Dr. Bullock.

State Medical Election—First Distinguished Award.—Dr. Elbert W. Jackson, Paducah, was chosen president-elect of the Kentucky State Medical Association during the annual meeting in Lexington October 31. Dr. J. Watts Stovall, Grayson, was installed as president. Other officers include Drs. Francis Guy Aud, Louisville, John M. Rees, Cynthiana, and Hugh L. Houston, Murray, vice presidents. Dr. William C. Bailey, Harlan, is delegate to the American Medical Association. Dr. Samuel H. Flowers, Middlesboro, was named orator in surgery for the state society meeting in 1946 and Dr. Samuel A. Oversterett, Louisville, orator in medicine. The association voted to raise its dues from $5 to $15 a year and recommended that the state legislature be asked to set aside a revolving fund of $50,000 to $75,000 for the training of rural doctors. The money would be lent to young men and women who pledged themselves to practice in rural areas and would be repaid by the borrowers. The first award of the association's Distinguished Service Medal (THE JOURNAL, May 26, p. 299) was made to Dr. Carl C. Howard, Glasgow, who is credited with starting the movement which led to a state plan for building five tuberculosis hospitals in the state.

LOUISIANA

Prizes to Students.—Dr. Benjamin T. Galloway Jr. recently received the Walter Reed Memorial Medal, given by the Louisiana State Medical Society to the graduate presenting the best thesis either on tropical or on preventive medicine. Dr. Galloway's subject was "Extraintestinal Amebiasis and Its Diagnosis." Other prizes included the Querens-Rives-Shore Award to Dr. Andreas V. N. Mortensen for his work on "Relation of Hypertension to Vascular Disease," the Jacob C. Geiger medal to Dr. Mitchell Ede for his work on "The Value of Influenza Vaccination" and the Sidney K. Simon Memorial Prize to Dr. Leo E. Johns Jr. for his work on "Regional Ileitis." Dr. Thomas G. Baffes received the Isadore Dyer medal, which is given to the student making the highest combined average for the four years.

MARYLAND

Tuberculosis Campaign Launched.—Health and welfare officials from Maryland, Virginia and the District of Columbia met at Glenn Dale Sanatorium October 25 to organize a permanent conference tending to control tuberculosis in the area. Dr. Herman Hilleboe, medical director in charge of the tuberculosis control division of the U. S. Public Health Service, outlined a "perfect program of tuberculosis control" for a city of Washington's size, major objectives of which include development of research to ascertain needs and facilities, increased case finding work to detect new cases before they are far advanced, sufficient beds, closer cooperation between welfare and health agencies in order to solve social and economic problems, which often block possible cure, and an extension and expansion of the rehabilitation program.

Faculty News.—Lieut. Col. Walter L. Kilby, after an absence of more than three years overseas with the 142d General Hospital, has returned and resumed his duties as professor of roentgenology in the University of Maryland School of Medicine and director of the department of roentgenology in the University Hospital. Col. Walter D. Wise recently was released from active duty with the armed forces and has resumed his position as a professor of surgery at the University of Maryland and chief of staff of the Mercy Hospital, Baltimore. Colonel Wise served for sixteen months as medical director of the Maryland State Selective Service and from August 11 until relief from active duty as consulting surgeon for the Third Service Command. Lieut. Col. Daniel James Greiner has returned from more than three and one-half years overseas as a member of the 142d General Hospital in the Fiji Islands, on Bougainville and in Calcutta, India, to take up his position as associate professor of pathology at the medical school. Major Harry M. Robinson Jr., who served with the 142d General Hospital, has returned to his position as assistant professor of dermatology. Dr. Frederick B. Mandeville, for eleven years professor of radiology at the Medical College of Virginia, Richmond, Va., has been appointed an associate professor of roentgenology at the medical school.

MICHIGAN

Battle Creek Sanitarium Litigation Ends.—After two years of litigation between the Battle Creek Sanitarium and the Seventh Day Adventist General Conference, a decree was entered in Calhoun County, Mich., November 6, in accordance with a compromise settlement. The Battle Creek Sanitarium emerges from this settlement under the old name of "The Battle Creek Sanitarium and Benevolent Association," free of all legal contacts with the Seventh Day Adventists. Following the sale of the main building of the Battle Creek Sanitarium to the government for conversion into the Percy Jones Hospital, patients were transferred to buildings across the street owned by the Race Betterment Foundation. The Seventh Day Adventists General Conference laid claim to this money and the sanitarium itself, including some $675,000 of the assets remaining after the expense of moving. The litigation was begun March 31, 1943 by Dr. John H. Kellogg. The final decree gave to the Adventists cash and some farms in Battle Creek Township in full settlement of all final and other claims against the sanitarium. A new institution called the "Michigan Sanitarium, Incorporated," with headquarters in Berrien Springs, Mich., has been established by the Adventist group. The new Battle Creek Sanitarium and Benevolent Association now operates the Battle Creek Sanitarium and has reportedly some 260 patients now in residence.

MISSOURI

William Sauer Honored on Retirement.—Dr. William E. Sauer, professor of otolaryngology at St. Louis University School of Medicine since 1925, was on account of his recent retirement awarded the Distinguished Service Professorship, the first appointment of its kind. Dr. Sauer has been director of the department of otolaryngology since 1925. He will be succeeded as director by Dr. Bernard J. McMahon, St. Louis, associate professor in the department. Other changes in the medical school include the appointment of Dr. Joseph A. Hardy, assistant professor of gynecology and obstetrics, as director of the department, filling the vacancy left by the recent death of Dr. William H. Vogt. Dr. Garold V. Stryker, assistant professor of dermatology, was named director of the department to succeed Dr. Joseph Grindon, who resigned in 1944 because of age.

NEW JERSEY

Committee Named to Study "Crippling" Diseases.—The New Jersey Crippled Children's Commission has appointed a fact finding committee to study the hospital and convalescent care facilities in the state and to recommend a plan to provide better care for victims of infantile paralysis and other crippling diseases. Arthur H. Moore, ex-governor of New Jersey, will head the committee, representing the public at large. Other members include Albert Leon, chairman of the commission; Dr. Jesse L. Mahaffey, Camden, representing the state board of health; Dr. Frederick G. Dilger, Hackensack, representing the state medical society, and Mrs. Gertrude Miller Buch and William C. Cope, acting director and secretary, respectively, of the crippled children's commission.

Nichols Medal Goes to Wendell Stanley for Virus Work.—Wendell M. Stanley, Sc.D., biochemist and member of the Rockefeller Institute for Medical Research, Princeton, is the recipient of the 1946 William H. Nichols Medal of the New York section of the American Chemical Society. The medal, which will be presented in March, was awarded to Dr. Stanley for his work in the chemistry of viruses. According to an announcement, Dr. Stanley upset the prevailing belief as to the origin of disease in 1935 when he announced that he had isolated in crystalline form a disease-producing virus and had used it to reproduce the disease. By thus showing that infectious diseases are not necessarily caused only by micro-organisms and their toxins, as had been generally supposed, he opened a new field of investigation in the fight to provide immunity against such maladies as influenza, infantile paralysis, encephalitis and the common cold.

NEW YORK

Patients to Receive Free X-Rays at Rochester General Hospital.—Beginning January 1 a chest x-ray examination will be given without charge to every patient admitted to the Rochester General Hospital. The films will be examined by a hospital radiologist and the results reported to the patient's physician.

Clinic for Rheumatic Fever.—A clinic for rheumatic fever will be opened in Rochester under the sponsorship of the Monroe County Medical Society, the city health bureau, the state department of health and the University of Rochester School of Medicine and Dentistry. The clinic will be conducted at the Rochester Municipal Hospital and will be opened to areas outside the city. Patients will be referred through private physicians. The clinic will be set up to diagnose and study rheumatic fever. Personnel for the clinic will be provided by all four of the sponsoring groups. A full time nurse to study home conditions of rheumatic patients, a secretary and several technicians will be contributed by the state department of health, and the city health bureau will supply clinic facilities and additional personnel. A committee of physicians of the Monroe County Medical Society will work in conjunction with the public health officials.

Personal.—Dr. Roy E. Reed, Fayetteville, was recently appointed health officer for the town of Manlius to succeed Dr. George J. Bryan, who will continue to serve as health officer for the village of Fayetteville, it is reported.——Dr. Frank E. Coughlin, district state health officer at Albany, has been appointed a member of the state board of medical examiners, succeeding Dr. Paul B. Brooks, Albany, whose term expired July 31.——Dr. Burtis B. Breese Jr., Rochester, has been named deputy health officer of the Rochester Health Bureau. The appointment will be effective about January 1. According to the Rochester *Times-Union*, October 19, Dr. Breese is the first of two new officers to be appointed to positions in the health bureau. He will be concerned chiefly with communicable diseases. A second health officer, who will specialize in venereal diseases, will be appointed later. Dr. Norris G. Orchard, Rochester, deputy city health officer for the last eighteen years, retired October 15 to enter private practice on Cape Cod.

New York City

The Brickner Lecture.—The twelfth Walter M. Brickner Lecture will be given at the Hospital for Joint Diseases, December 15, by Dr. Cecil K. Drinker, professor of physiology, Harvard Medical School, Boston. Dr. Drinker's subject will be "Physiology of Immobilization and the Local Effects of Heat and Cold."

Cerebral Palsy Demonstration Center Planned.—The establishment of a demonstration center in New York for the study of cerebral palsy and the treatment of spastics and children otherwise affected by injury to the brain is under consideration by the Pediatric Foundation. A campaign to raise $1,000,000 to finance the project was launched October 2 at a meeting of the foundation in the Hotel Carlyle. The Pediatric Foundation was organized in 1944 as a nonprofit membership corporation to encourage greater use of established work for mental and physical health in early childhood (THE JOURNAL, February 24, p. 474).

Howard Rusk Joins New York Times Staff.—Dr. Howard A. Rusk, who recently resigned from the Army to serve as consultant on physical rehabilitation for the Baruch Committee on Physical Medicine, has joined the staff of the New York *Times* and will contribute articles dealing with every phase of the country's problems of "human reconversion." Beginning in December, Dr. Rusk will write on the needs and tasks of the thousands of service men now facing readjustment to civilian life. At a later date his articles will take up the rehabilitation of war workers and other civilians whose lives were radically affected by the war.

Lenox Hill Hospital Affiliates with New York University.—A teaching affiliation has been established between the New York University College of Medicine and Lenox Hill Hospital. The program will be established on the graduate and postgraduate level, as well as on the undergraduate level. For some years undergraduate elective courses have been given at Lenox Hill by the directors of the surgical services, Drs. Carl Eggers, John C. A. Gerster, Otto C. Pickhardt and DeWitt Stetten, who also hold the posts of clinical professors of surgery at New York University. In addition, the cardiac clinic at Lenox Hill, under the direction of Dr. Clarence E. de la Chapelle, assistant dean of the New York University College of Medicine, has been utilized for elective work in the junior and senior years. The new affiliation also makes possible the extension of undergraduate teaching to other departments of the hospital. On the graduate level, internships, residencies and also fellowships which may be established at the hospital will carry with them eligibility for additional training in the basic sciences at the college. Opportunities for physicians already engaged in practice will also be possible through lectures, clinics and demonstrations and other forms of such courses. These are being planned by the medical board of the hospital. The medical board of Lenox Hill Hospital has created a committee on medical education to serve as the liaison between the college and the hospital in the establishment of the teaching program. Quite a number of the members of the Lenox Hill staff are already members of the New York University College of Medicine faculty, and officials of both institutions predict that this number will be increased appreciably in the coming year.

NORTH CAROLINA

State Board Acts to Expedite Licensure.—The North Carolina Board of Medical Examiners has decided to call its members together every three months during the next year to expedite the entrance of qualified medical veterans into practice, particularly for licensure by endorsement of credentials.

Changes in Health Officers.—Dr. Harold C. Whims, Newton, health officer for Catawba County, has resigned to become health officer of Buncombe County with headquarters in Asheville.——Dr. Zack P. Mitchell, Shelby, health officer of Cleveland County, has been named health officer of Iredell County.——Dr. Hamilton W. Stevens Jr., Jacksonville, is the new health officer of Wilson County, succeeding the late Dr. Wade H. Anderson, Wilson.

PENNSYLVANIA

Loan Fund Totals $65,000.—The Veterans' Loan Fund in Pennsylvania, contributed by members of the Medical Society of the State of Pennsylvania to help members of the component county medical societies returning from World War II military service, totaled $65,032 on October 17.

Philadelphia

Blood Bank Named for Physician Who Died in Action.—Nazareth Hospital has dedicated its newly formed blood bank in memory of Capt. Leonard J. McGee, M. C., a former intern, who was killed in action in Germany on March 24 while serving as battalion surgeon of the 194th Glider Infantry, 17th Airborne Division, according to *Philadelphia Medicine*.

Thousands for Surgical Research.—Dr. Theodore L. Chase, a retired Philadelphia surgeon, now living in Reno, Nev., has given $450,000 to Temple University School of Medicine to establish and endow a surgical research foundation, with special emphasis on cancer, it was announced November 12. The gift was made by Dr. Chase in memory of his late wife, Dr. Agnes B. Chase, a native Philadelphian, who graduated at Temple University School of Medicine in 1919. At the request of Dr. Chase, who practiced surgery in Philadelphia for thirty-five years, "the efforts of the Agnes Barr Chase Surgical Research Foundation are to be directed to research in general surgery with the particular emphasis on the study of the cause or causes and treatment of cancer." Laboratories will be set up in the medical school, while clinical application will be pursued in the Temple University Hospital.

TEXAS

Randall Hall.—On the opening of the fall session of the University of Texas Medical Branch, Galveston, the auditorium of the Out-Patient Clinic Building was named Randall Hall in honor of Dr. Edward Randall (1860-1944) who served as professor of materia medica and therapeutics from 1891 to 1929, when he became professor emeritus and chairman of the board of regents of the University of Texas.

Grants for Research.—Sharp & Dohme, Inc., Glen Olden, Pa., have given a grant to the department of pediatrics of the University of Texas Medical Branch, Galveston, for study of sulfonamide drugs in the control of intestinal infections. The grant is to be administered by Dr. Arild E. Hansen, Galveston, professor of pediatrics and director of the child health program, with the cooperation of Dr. Edgar J. Poth, Galveston, professor of surgery, and director of the laboratory of experimental surgery, and MacDonald Fulton, Ph.D., Dallas, visiting professor of pediatric research. The Sugar Research Foundation, Inc., of New York City has made a grant of $1,000 to support research under the direction of Wilbur A. Selle, Ph.D., Galveston, profesor of physiology, University of Texas Medical Branch, Galveston, on the influence of carbohydrates on experimental liver cancer. The John and Mary

R. Markle Foundation has granted $7,000 to continue the support for two years of the study of filariasis under the direction of James Allen Scott, Sc.D., associate professor of epidemiology and medical statistics, at the medical school.

GENERAL

Lectures on Motor Anomalies Available.—Because of demand a third printing of Alfred Bielschowsky's "Lectures on Motor Anomalies" is now on sale at Dartmouth College Publications, Hanover, New Hampshire, at $1.50 per copy, postpaid.

Mayo Clinic Flight.—Northwest Airlines announces an additional daily flight from Chicago to Rochester, Minn., which has been designated the Mayo Clinic flight. The additional trip brings to four the number now operating from Chicago to the home of the Mayo Clinic under the auspices of Northwest Airlines.

Abraham Flexner Heads Scientific Sponsors of Proposed Palestine Medical School.—Dr. Abraham Flexner, Princeton, N. J., formerly director of the Institute for Advanced Study, Princeton, N. J., has been named head of a committee of scientists to sponsor the establishment of the Hebrew University-Hadassah Medical School on Mount Scopus, Jerusalem (THE JOURNAL, October 27, p. 643). Hadassah and the Hebrew University are being guided in the planning for the medical school by a medical reference board.

Friedenwald Medal Goes to Lewis Cole.—The Julius Friedenwald Medal, which is presented annually by the American Gastroenterological Association, has been awarded for 1945 to Dr. Lewis G. Cole, White Plains, N. Y. Dr. Cole, who for a number of years was professor of roentgenology at Cornell University Medical College, New York, has, among other research, carried on extensive work on the differential diagnosis of gastric ulcer and cancer of the gastrointestinal tract. He graduated at Columbia University College of Physicians and Surgeons in 1898.

Winners in Modern Hospital Contest.—In the essay competition on "A Plan for Improving Hospital Treatment of Psychiatric Patients," offered by *Modern Hospital*, first prize of $500 has been awarded to Lieut. (jg) Lester Lee Hasenbush, U.S.N.R., and his wife, Grace Hasenbush, a graduate social worker, as co-authors. Dr. Hasenbush graduated at the Johns Hopkins University School of Medicine, Baltimore, in 1938. Gerard Victor Haigh, attendant at Norwich State Hospital, Norwich, Conn., won second prize of $350, and third prize of $150 went to Dr. Kurt R. Eissler, captain, medical corps.

Southern Hospital Council Formed.—Representatives of hospitals in several Southern states met informally in Cincinnati during the sessions of the Southern Medical Association, November 12-15, and formed the "Southern Hospital Council." The object of the organization is to provide an opportunity once a year for discussion of mutual problems by doctor and lay hospital managers and administrators in the South. Meetings will be held annually on the Sunday preceding the opening session of the Southern Medical Association. A temporary organization was set up which includes Dr. Robert J. Wilkinson, Huntington, as chairman, and Dr. Hamilton W. McKay, Charlotte, N. C., secretary.

Meetings on Clinical Research.—Sectional meetings of the American Federation for Clinical Research have been announced as follows:

Southern Section, Hotel Biltmore, Atlanta, December 8.
Eastern Section, Philadelphia General Hospital, December 8.
Far Western Section, Salt Lake General Hospital, Salt Lake City, December 28-29.

On November 1 in Chicago Dr. Frederick W. Hoffbauer, Minneapolis, was elected chairman of the Mid-Western Section of the federation and Dr. Kenneth G. Kohlsteadt, Indianapolis, secretary. Dr. Charles H. Wheeler Jr., New York, is president of the American Federation for Clinical Research and Dr. Richard H. Lyons, University Hospital, Ann Arbor, Mich., secretary.

Manufacturers' Award Goes to Rockefeller Institute.—On December 10 special ceremonies will be held at the Waldorf-Astoria Hotel, New York, to present the seventh Annual Scientific Award of the American Pharmaceutical Manufacturers' Association to the Rockefeller Institute for Medical Research. Alan Valentine, LL.D., president, University of Rochester, Rochester, N. Y., will give the presentation address on "Fundamental Research in Medical Sciences—Its Essential Importance to Public Health," and Dr. Herbert S. Gasser, director of the Rockefeller Institute for Medical Research, will give the speech of acceptance. The institute was selected for the award "in recognition of its great contributions to public health, by fundamental research in the field of the medical sciences, which is of profound and lasting value to mankind." Other speakers on the program will include:

Dr. John G. Gibson II, Boston, Progress in Blood Therapy.
Dr. James A. Shannon, New York, Progress in Antimalaria Therapy.
Selman A. Waksman, Ph.D., New Brunswick, N. J., Progress in Antibiotic Therapy.
George R. Cowgill, Ph.D., New Haven, Conn., Progress in Vitamin Therapy.
Dr. Sidney C. Madden, Atlanta, Ga., Progress in Amino Acid Therapy.
Dr. George W. Thorn, Boston, Progress in Hormone Therapy.

Industrial Medicine and Surgery Meeting.—The midwinter meeting of the Central States Society of Industrial Medicine and Surgery will be held December 7 at the Palmer House, Chicago. Among the speakers will be:

Dr. Urban E. Gebhard, Milwaukee, Management of Industrial Fractures.
Dr. Edwin W. Ryerson, Chicago, Painful Conditions About the Shoulder Joint.
Dr. Leonard F. Weber, Chicago, Industrial Dermatoses.
Major Frederick C. Reynolds, M. C., and Capt. Charles E. Stebbins, M. C., Chicago, Early Closure of Chronic Osteomyelitis with Split Thickness Skin Grafts.
Dr. Earl A. Irvin, Detroit, Psychosomatic Consultations in Industry.
Dr. Milton H. Kronenberg, Peoria, Ill., Reemployment of the Physically Handicapped Veteran.

The morning will be devoted to a clinical session at St. Luke's Hospital.

Government Services

Farewell Reception in Honor of Dr. Dunham

A farewell reception was recently held in the office of the Institute of Inter-American Affairs, Washington, in honor of Dr. George C. Dunham, who recently resigned as president of the institute because of ill health (THE JOURNAL, October 13, p. 524).

Medical Library News

The *Army Medical Library News* made its appearance with the November issue, supplanting the former *News Letter*. The *News* has been made possible by the Association of Honorary Consultants to the Army Medical Library. At the recent annual meeting of the association Dr. John F. Fulton, New Haven, Conn., was elected president, Chauncey D. Leake, Ph.D., Galveston, Texas, vice president and Col. Harold W. Jones, Washington, D. C., secretary-treasurer.

Korean Physicians Arrive for Training

American scientific aid for the people of Korea was inaugurated November 7 at a conference among nine Korean physicians and officers of the Civil Public Health Division of the Army Medical Department. The entire expense of the group while in the United States will be borne by the International Health Division of the Rockefeller Foundation. Flown to the United States from Korea, members of the study group include Drs. Long Woen Whong, Chang Soon Choi, In Ho Chu, Pum Suk Han, Dong Chul Kim, Myong Gong Choi, Hyong Nai Song, Haing In Paik and Yu Sun Yun. A tenth member, Dr. Chai Chang Choi, left the group at Honolulu because of lack of transportation facilities and was to go directly to the University of Michigan within a few days. The Korean physicians will be trained individually in civil public health, epidemiology, preventive medicine, bacteriology, immunology, parasitology and special health problems of Korea. Three will go to Johns Hopkins University School of Medicine, three to Harvard Medical School and four to the University of Michigan Medical School. In a statement to the press, Major Gen. Norman T. Kirk, Surgeon General, United States Army, stated that the purpose of the year's training is "to lay the foundation for a self-sufficient medical service for the Korean nation. For more than thirty years the Japanese have dominated all medical and other scientific work in Korea as well as its national and local government affairs. No Korean has been allowed to serve in a position of responsibility in the nation or in his own community. It is the hope of the Rockefeller Foundation and ourselves that these men will form the nucleus of a new medical service for the people of their country, and if earnestness and enthusiasm are true criteria they will succeed."

Foreign Letters

LONDON

(From Our Regular Correspondent)

Oct. 27, 1945.

Penicillin in Ophthalmology

Professor Arnold Sorsby spoke at the Section of Ophthalmology of the Royal Society of Medicine on penicillin in ophthalmology. Although penicillin is commonly regarded as nontoxic and readily diffusible, these qualities do not apply to its ophthalmologic use. It is possible to give penicillin in daily subconjunctival injections if the total dosage is not more than 500 or 600 units. Professor Sorsby has observed only 1 case of allergic reaction—in an infant with ophthalmia neonatorum; the instillation of a drop of penicillin into each eye caused severe edema of the lids. Penicillin used locally was effective for the organisms in ophthalmia neonatorum. In 98 cases using 2,500 units of penicillin per cubic centimeter there were 78 cures, 13 relapses and 7 failures. The frequency of instillation as well as the concentration used was important. When penicillin was applied at intervals of an hour the results were good; at intervals of half an hour they were better, at intervals of five minutes better still. For technical reasons it was not possible to institute the constant drip, and Professor Sorsby now uses the procedure of instilling penicillin at intervals of one minute and in most cases the condition is under control within half an hour.

Penicillin has been used in a variety of eye conditions. Control of hypopyon ulcer has been obtained with penicillin drops. One would not expect penicillin to be effective in trachoma, as trachoma is a virus infection. Professor Sorsby has used penicillin in 3 cases of trachoma but in only 1, a fresh case, was a good result rapidly obtained. In 1 case of sympathetic ophthalmia the result was not encouraging. In iridocyclitis the results reported were not significant. Penicillin is a powerful agent but a limited one. It does not readily penetrate into the eye. As a local application in external infections it was of extreme value. Unlike the sulfonamides, it is not inactivated by pus and so can be used locally where the sulfonamides fail. But in intraocular inflammation the sulfonamides have not proved beneficial, and penicillin was not likely to be helpful either.

Bronchopneumonia with Radiologic Diagnosis of Tuberculosis

A case of bronchopneumonia radiologically diagnosed as tuberculosis is recorded in the *Clinical Proceedings of Cape Town Postgraduate Medical Association* by Major S. K. Montgomery. A native soldier aged 26 was admitted to a military hospital on July 12, 1944 with a provisional diagnosis of asthma and chronic bronchitis. For nine months he had had frequent bouts of tightness of the chest and wheezing lasting for a few weeks. He had lost weight and energy and had night sweats. He later gave a history of hemoptysis in 1943, for which he had been treated in a military hospital. For two years previous to his enlistment he worked underground in a coal mine. Since February 1942 there had been cough, producing a small amount of sputum.

On examination the temperature was 99.8 F., the pulse rate 108 and the respiratory rate 24. There were multiple scattered rhonchi in both lungs, mainly expiratory. There was no bronchial breathing. From July 12 to 20, 1944 there was moderate pyrexia, which then subsided. Hemoptysis was observed on July 12 and 22. Night sweats also occurred. X-ray examination on July 17 revealed that the diaphragm moved freely. In all zones of both lungs there was soft confluent infiltration with cavities visible on the screen in the right lower zone and the left upper zone. The appearance was very suggestive of bilateral pulmonary tuberculosis. The suptum examination was negative for tubercle bacilli. The blood sedimentation rate was 12 mm. in one and one-half hours. On August 28 there were numerous rales and rhonchi throughout both lungs and the patient's general condition had greatly improved. X-ray examination revealed that the patchy shadowing seen at the previous examination was no longer present. The lungs appeared normally clear but with some increased vascular shadowing. The examination suggested a catarrhal chest, and there was no infiltration of the type associated with pulmonary tuberculosis.

The case shows how easy it is to mistake simple bronchopneumonia for tuberculosis of a bronchopneumonic type. The diagnosis was influenced by the fact that there appeared to be small cavities on screening. Pseudocavitation has been noted previously in connection with virus or primary atypical pneumonia. On review of the first film it was noted that although there was widespread confluent shadowing in patches throughout both lungs there were no rosette-like infiltrating shadows so typical of pulmonary tuberculosis. In bronchopneumonic pulmonary tuberculosis it is unusual for these to be entirely absent. Their absence should have led to greater caution in the diagnosis of tuberculosis.

PARIS

(From Our Regular Correspondent)

Oct. 14, 1945.

Medical Fees

The question of medical fees included in the social security plan has recently been discussed. At a meeting of the representatives of the social security institutions, the ministers of public health, of labor and of national economy and the Physicians' Syndicate the following agreement was reached: The syndicate of physicians shall establish fees, but it must do so in agreement with the regional institutions of social security, which set these fees in their special conventions. These conventions must be ratified by a tripartite commission the composition of which shall be one third doctors, one third representatives of the organizations of social security and one third representatives of the ministers of public health, labor and national economy. If the tripartite commission does not agree with the arrangement concerning the rates of fees arrived at by the doctors and the institutions of social security, it can veto it when necessary in the general interest. In this event it returns the plan to the interested parties without fixing a schedule; the commission is entitled to do this only in the case of a second adjournment.

Charges above the agreed fees are allowed when justified by the services rendered, the standing of the patient and other valid reasons. The protest against overcharges will be submitted to a commission comprising a doctor-inspector and a nonmedical representative of a social insurance institution on the one hand and two representatives of the syndicate of physicians on the other. If the commission finds that there is an abuse, the complaint will be settled by professional jurisdiction. The social security bill has been passed by the Consultative Assembly. The provisional government has approved it and the act appeared in the *Journal officiel*.

Recurrent Fever in North Africa

On July 31 Edouard Benhamou presented to the Académie de médecine a memorandum on the epidemic of recurrent fever now prevailing in North Africa, affecting 50,000 persons, mostly natives. Treatment with neoarsphenamine injected intravenously has given excellent results. Only one injection of 0.6 cc. at the end of the first febrile curve, on about the fourth or the fifth day, is effective and usually prevents recurrent fever. Acetarsone in tablets did not give good results in Tunisia. Durand reports better results with acetarsone in powder, 1 Gm. each morning for four days. Neoarsphenamine is not contraindicated in icteric forms of

recurrent fever. Globulins from convalescents' blood as recommended by Zermati can be preventive and curative, especially when one hesitates to employ neoarsphenamine. In hemorrhagic and neurologic cases transfusion of total or concentrated blood is employed. The author adds that a low mortality has been registered during this epidemic.

By a recent decree of the minister of public health, recurrent typhus has been added to the list of contagious diseases to be compulsorily reported.

BRAZIL

(From Our Regular Correspondent)

RIO DE JANEIRO, Oct. 7, 1945.

Socialization of Medicine

President Getulio Vargas recently signed two decrees of the utmost importance to the practice of medicine and to the social organization of the country. The first decree establishes the minimum sum to be paid to doctors for professional services rendered by them as employees in private medical organizations. The professional services are distributed in many specialties, as for example clinicians, surgeons, radiologists, analysts or hygienists, and several subdivisions, as director, assistant or auxiliary. The same decree states the maximum duration of work, which varies from four to eight hours a day, with a weekly maximum of twenty-four hours and a scale which introduces a basis for variation important to cities and states. The decree specifies that, in cases of disagreement between a private patient and the physician about the sum to be collected for medical care, when the case goes to court and the sum claimed is not more than $500 the amount demanded shall be considered a definite right of the physician, in accordance with the records on his books. To enjoy this right the physician is obliged to have routine record books with full informative entries in order to make possible the necessary investigations by the judge. This decree for the practice of medicine corresponds to the minimum wage and salary law in labor legislation. In many known cases the federal government and the state and municipal administrations pay their medical employees salaries that are substantially inferior to the minimum established by the new decree.

The second decree is more important than the first. There is no organization in Brazil similar to the American Medical Association, and up to now cases infringing medical ethics have been judged by the local medical societies which are not affiliated with any national or central professional organization. The new decree institutes councils of medicine "to maintain the exact observance of the principles of professional ethics in the practice of medicine." There will be a federal council in the capital of the country and a regional council in every state or federal territory. The regional councils shall be composed of five members elected for three years by the secret vote of the physicians regularly registered in the state or territory. The federal council shall be composed of seven members elected by secret vote for a five year tenure. The principal functions of the councils are (*a*) to maintain a register of the physicians legally entitled to practice medicine in the state or territory, (*b*) to judge the cases of infringement of the principles of medical ethics and impose the necessary penalties and (*c*) to exercise the right of arbitration in the cases in which physicians are involved professionally. The penalties the councils can impose are (*a*) confidential advertence, (*b*) confidential reprehension, (*c*) public reprehension published in the Bulletin of the Medical Syndicate, (*d*) suspension from medical practice for a period of thirty days and (*e*) exclusion of the physician from the medical profession, always by a vote of the federal council. From these penalties there can be appeal, without suspensive consequence, to the federal council, except in the case of exclusion of the physician from the medical profession. This is the only instance in which the appeal shall have suspensive effect. The expenses of this quasijudicial administrative machinery are to be covered by a deduction of 20 per cent of the dues which every physician is obliged to pay as a member of local medical syndicates, which are organizations created by the Brazilian "New State" in the Ministry of Labor. Pending the election and the organization of the federal and the regional councils, the principles of professional ethics in the practice of medicine will be enforced by the regulations contained in the proposed code of medical ethics as it has been approved by the fourth Brazilian Medical Syndicalist Congress. The first federal council will be composed of seven members chosen by the minister of labor from a list of twenty-eight doctors prepared by the president of the Federation of the Medical Syndicates. The minister of labor is in charge of the administration of the decree.

These two decrees, but particularly the second, which created the medical councils, have aroused great opposition and protest from the medical associations and from the leading practitioners of medicine all over the country. Eighteen medical associations in the city of Rio de Janeiro and many from other parts of Brazil have sent telegrams to President Getulio Vargas indicating their disapproval of the decree. The National Academy of Medicine of Rio de Janeiro, the most important medical association of the country, and for many years a kind of "senate" of Brazilian medicine, recorded the publication of the decree and immediately suspended its weekly meeting as a protest. At the next meeting Dr. Pitanga Santos, a leading proctologist of Rio, addressed the academy on the subject, stating that the decree should be considered as having a typical nazi-fascist pattern. Dr. Santos criticized the section of the decree which entitles the minister of labor, who usually is not a physician, to choose the first members of the federal council. Dr. Santos pointed out that the medical profession in Brazil is for the most part composed of law abiding citizens. For the few who may need some disciplinary punishment the "New State" has a handful of special decrees. "What has the minister of labor to do with Brazilian physicians?" exclaimed Dr. Santos.

Among the many physicians of all the states of Brazil who have protested against the creation of these medical councils is Dr. Pedro da Cunha, a professor of medicine at the Fluminense School of Medicine of Niteroi and a popular practitioner in the city of Rio de Janeiro. Dr. Cunha's opinion about the decree has made a deep impression on the medical profession and on the general population as well.

Marriages

JAMES BOND DEALY JR., West Newton, Mass., to Miss Katharine Sumner Lasell in New York, September 15.

JOHN CAMPPBELL O'KEEFFE, Albany, N. Y., to Miss Mona Ann Brown of Fieldston, N. Y., September 15.

JOHN WILLIAM FRISTOE JR., Albany, N. Y., to Miss Ruth Sneed Conner of Atlanta, September 21.

WILLIAM BURGETT SMITH, Grand Ridge, Ill., to Miss Jane Hunter in Kansas City, Mo., August 13.

SPENCER W. NORTHUP, Toledo, Ohio, to Miss Virginia Ferris Banting in Maumee, October 6.

JAMES F. PECK, Princeton, Ind., to Miss Mary Evelyn Edgington of Indianapolis, September 1.

JAMES T. NIX JR. to Miss Mary E. Barksdale, both of New Orleans, September 24.

RUDOLPH V. POWELL to Mrs. Vincentia Rehme, both of St. Louis, September 28.

CHARLES EMMETT ROGERS to Miss Frances Barry, both of Milwaukee, July 3.

Deaths

Ralph Charles Matson ✠ Portland, Ore.; University of Oregon Medical School, Portland, 1902; born in Brookville, Pa., Jan. 21, 1880; associate clinical professor of medicine and surgery at his alma mater, where he had been a member of the executive faculty and co-director of the tuberculosis clinic; specialist certified by the American Board of Internal Medicine; member of the Pacific Coast Surgical Association, Portland Academy of Medicine, Pacific Interurban Clinical Club, American Association for Thoracic Surgery, American Trudeau Society, Oregon State Tuberculosis Society and the American Clinical and Climatological Association; member of the executive committee of the International Artificial Pneumothorax Association; honorary member of the Minneapolis Surgical Society, Kansas City Southwest Clinical Society, Eastern Oregon District Medical Society and the Hollywood Academy of Medicine, Los Angeles; past president of the American Sanatorium Association; member of the board of regents of the American College of Chest Physicians, which he served as president 1939-1940 and in 1941; director and formerly vice president of the National Tuberculosis Association; formerly vice president of the Pan Pacific Surgical Association; fellow of the American College of Physicians and the American College of Surgeons; fellow of the International College of Surgeons in Geneva in 1937; delegate to the International Union Against Tuberculosis in Washington, D. C., in 1908, Rome in 1912 and Lausanne, Switzerland, in 1923; vice chairman of the thoracic section of the seventh cruise congress of the Pan American Surgical Association in 1938; honorable first lieutenant with the Harvard University Surgical Unit, serving with the British Expeditionary Forces in 1916, a captain in the Royal Army Medical Corps in 1917 and a major in the medical corps, U. S. Army, serving as chief medical examiner and tuberculosis specialist at Camp Lewis from 1917 to 1919 and chief of the medical staff at General Hospital number 21, Denver, 1919-1920; lieutenant colonel, medical reserve corps, U. S. Army, not on active duty; director, department of surgery, Portland Open Air Sanatorium, Milwaukie; chief surgeon, University State Tuberculosis Hospital; attending specialist, chest surgery, Chest Surgical Center, Veterans Administration Facility; chest consultant, Multnomah County Hospital; consulting thoracic surgeon, Doernbecher Memorial Hospital for Children; member, visiting staff, Good Samaritan Hospital; acting assistant surgeon, U. S. Public Health Service, Relief Station; member, specialists' panel, Union Oil Company; a member, associate medical advisory board, National Jewish Hospital, Denver; served as honorary member of the staff of the Lymanhurst School for Tuberculosis in Minneapolis; chairman of the editorial board of *Diseases of the Chest* and on the editorial board of the *Western Journal of Surgery, Obstetrics and Gynecology;* author of numerous articles in English, German and French on the diagnosis, management and medical and surgical treatment of pulmonary tuberculosis and contributor of sections or chapters to books; died October 26, aged 65.

William Walter Young ✠ Atlanta, Ga.; Johns Hopkins University School of Medicine, Baltimore, 1913; professor of psychiatry and neurology at the Emory University School of Medicine; specialist certified by the American Board of Psychiatry and Neurology, Inc.; member of the American Psychiatric Association and the Southern Medical Association, of which he had been chairman of the section on psychiatry and neurology in 1933; on the staffs of the Emory University, Grady and Piedmont hospitals and St. Joseph's Infirmary; served as consultant psychiatrist to the U. S. District Court; served during World War I; died September 7, aged 55, of myocardial infarction.

Henry Mann Silver ✠ New York; Bellevue Hospital Medical College, New York, 1875; fellow of the American College of Surgeons and the New York Academy of Medicine; formerly professor of clinical surgery at the University and Bellevue Hospital Medical College and professor of surgery at the Woman's Medical College of the New York Infirmary for Women and Children; consulting surgeon, Gouverneur Hospital and New York Infirmary for Women and Children in New York and the St. Luke's Hospital in Newburgh; died September 27, aged 94, of senility.

Dominick Francis Aloisio, Herkimer, N. Y.; New York Homeopathic Medical College and Flower Hospital, New York, 1930; member of the American Medical Association; past president of the Herkimer County Medical Society; served as chief of staff of the Memorial Hospital; died at Newport in August, aged 45.

Joseph T. Axline ✠ North Hollywood, Calif.; St. Louis University School of Medicine, 1906; served in the medical corps of the U. S. Army with the Thirty-Sixth division overseas during World War I, returning to this country with the rank of major; retired from the Reserve Corps in 1933 with the rank of lieutenant colonel; on the staffs of the Valley Hospital in Van Nuys and the St. Joseph's Hospital in Burbank; died on Balboa Island August 14, aged 63, of coronary occlusion.

Henry G. Berry, Mount Clemens, Mich.; Detroit College of Medicine, 1886; member of the American Medical Association; emeritus member of the Michigan State Medical Society; on the staffs of St. Joseph Sanitarium and Hospital in Mount Clemens and St. Mary's Hospital in Detroit; died in Camrose, Alta., August 19, aged 80, of diabetes mellitus and myocardial failure.

William Thomas Bradley, Blackton, Ark.; Chattanooga (Tenn.) Medical College, 1903; member of the American Medical Association; died recently, aged 70, of carcinoma of the prostate.

James Charles Brown, Littleport, Iowa; Chicago College of Medicine and Surgery, 1911; member of the American Medical Association; died July 9, aged 72, of carcinoma of the bowel.

George Vrooman Cochran ✠ Oakland, Calif.; University of California Medical School, San Francisco, 1931; served as a captain in the medical corps, Army of the United States, from May 1942 to May 1944, when he retired because of total permanent disability; died July 2, aged 48, of malignant hypertension.

Edward Merriman Coleman, Clermont, Fla.; University of Louisville Department of Medicine, 1898; member of the American Medical Association; member of the county board of health; served during the Spanish-American War and World War I; died August 4, aged 72, of cerebral hemorrhage and nephritis.

Camilles Ogden Driver, Los Angeles; Rush Medical College, Chicago, 1922; died in the Hospital of the Good Samaritan August 2, aged 48.

William Elliot Foster, Babylon, N. Y.; New York Homeopathic Medical College and Hospital, New York, 1891; member of the American Medical Association; a director of the Babylon National Bank and Trust Company; died August 30, aged 78, of cardiovascular sclerosis.

Ermin Morton Gardinier, Bennington, Vt.; University of Vermont College of Medicine, Burlington, 1912; member of the American Medical Association; on the staff of the Putnam Memorial Hospital, where he died July 26, aged 56, of cerebral thrombosis.

Merritt Jemison Heath ✠ Birmingham, Ala.; Birmingham Medical College, 1913; served during World War I; died August 31, aged 58, of coronary occlusion.

Stanton Hendrick, Oneonta, N. Y.; Albany Medical College, 1892; member of the American Medical Association; for many years on the staff of the Fox Memorial Hospital; died August 10, aged 80, of cardiac thrombosis.

George Platt Hurd, Chula Vista, Calif.; Dartmouth Medical School, Hanover, N. H., 1888; died in San Diego July 11, aged 82, of arteriosclerosis, heart disease and uremia.

Hamner Carson Irwin, Orange, Texas; University of Maryland School of Medicine, Baltimore, 1905; member of the American Medical Association; at one time a fellow at the Mayo Foundation in Rochester, Minn.; during World War I served as major in the medical corps, British Expeditionary Forces, and was relieved from service in the U. S. Army with the rank of lieutenant colonel; died in the Veterans Administration Facility, Legion, August 6, aged 67, of coronary arteriosclerosis, pulmonary atelectasis and emphysema.

William Earl Janes ✠ Eureka, Kan.; University of Kansas School of Medicine, Kansas City, 1918; secretary of the Butler-Greenwood Counties Medical Society; served as vice president of the Kansas Medical Society; died in the Wesley Hospital, Wichita, July 5, aged 59, of carcinoma of the pancreas.

Arthur Jordan ✠ Seattle; Columbian University Medical Department, Washington, D. C., 1893; veteran of the Spanish-American War and World War I; formerly associated with the U. S. Public Health Service; died July 6, aged 75, of coronary thrombosis.

Charles Aubrey Joy, Wayland, N. Y.; Albany Medical College, 1914; served during World War I; for many years on the staff as senior assistant physician of the Craig Colony in Sonyea; died July 2, aged 60, of coronary thrombosis.

Charles Joseph Kelley, Anselmo, Neb.; College of Physicians and Surgeons, Keokuk, Iowa, 1889; Rush Medical College, Chicago, 1893; died July 3, aged 87, of nephritis.

Allen Edward Kidd, Portland, Ore.; Barnes Medical College, St. Louis, 1905; member of the American Medical Association; served on the faculty of his alma mater; on the staffs of the Hahnemann and Providence hospitals; died July 7, aged 69, of coronary thrombosis.

George Christopher Kieffer, Philadelphia; Jefferson Medical College of Philadelphia, 1900; served during World War I; chief of medical staff, St. Mary's Hospital, where he died August 18, aged 67, of generalized carcinoma.

Herman William Julius Koerper, Columbus, Ohio; Rush Medical College, Chicago, 1912; member of the American Medical Association and the Columbus Obstetrical and Gynecological Society; fellow of the American College of Surgeons; associate professor of obstetrics at the Ohio State University College of Medicine; consulting obstetrician at Mount Carmel and University hospitals; served during World War I; died July 26, aged 57.

Orren W. Loughlen ✠ Puyallup, Wash.; University of the City of New York Medical Department, New York, 1889; died July 15, aged 84, of arteriosclerotic heart disease.

Ralph Lippincott Lutz ✠ Roscoe, Pa.; University of Pittsburgh School of Medicine, 1930; interned at the Presbyterian and Elizabeth Steel Magee Hospitals in Pittsburgh; member of the local school board and of the board of directors of the First National Bank; on the staff of the Charleroi-Monessen Hospital, Lock Number Four, where he died July 30, aged 39, of thrombosis of the mesenteric veins.

Eugene Pierre Mallett, Hendersonville, N. C.; Long Island College Hospital, Brooklyn, 1889; on the staff of the Patton Memorial Hospital; died August 25, aged 83, of lobar pneumonia and asthma.

Van Newhall Marsh ✠ Painesville, Ohio; University and Bellevue Hospital Medical College, New York, 1899; University of Wooster Medical Department, Cleveland, 1900; in 1938 member of the House of Delegates of the American Medical Association, past chairman of the city board of health; medical examiner for the draft board; died in Ukiah, Calif., July 25, aged 69, of cerebral thrombosis.

CAPT. DONALD WALKER CHEFF
M. C., A. U. S., 1913-1945

CAPT. EARL BOHNERT
M. C., A. U. S., 1914-1944

CAPT. RAYMOND WEBSTER HEGE
(MC), U.S.N., 1901-1945

Charles John Lavery, Aberdeen, S. D. (licensed in South Dakota in 1890); formerly mayor of Fort Pierre; died in St. Luke's Hospital July 20, aged 78, of adenocarcinoma of the prostate.

John McDannell ✠ Nashua, Iowa; Kentucky School of Medicine, Louisville, 1891; on the staff of the Cedar Valley Hospital, Charles City; died in Charles City July 14, aged 75, of uremia and coronary thrombosis.

KILLED IN ACTION

Donald Walker Cheff, Waynesboro, Pa.; University of Nebraska College of Medicine, Omaha, 1937; member of the American Medical Association and the Medical Society of Delaware; interned at the Delaware Hospital in Wilmington; served a residency at the Brandywine Sanatorium in Marshallton, Del.; on the staffs of the Delaware and Wilmington General hospitals, both in Wilmington, Del.; began active duty as a first lieutenant in the medical corps, Army of the United States, on June 20, 1942; promoted to captain on May 1, 1943; had initial training with the 95th Division but was transferred to the 77th Division before going overseas; served as commander of a medical battalion; served with the famous 77th (Statue of Liberty) Division, going to the Pacific with the division; took part in the invasion of Guam and of Leyte, where he was awarded the Bronze Star for heroism in action; awarded the Silver Star medal; killed in action in Ie Jima April 16, aged 32.

Earl Bohnert, St. Louis; Washington University School of Medicine, St. Louis, 1941; served an internship and residency at St. Louis City Hospital; began active duty as a first lieutenant in the medical corps, Army of the United States, on Aug. 25, 1943; promoted to captain; killed in action in the European area June 10, 1944, aged 29.

Raymond Webster Hege ✠ Captain, M. C., U. S. Navy, San Diego, Calif.; University of Cincinnati College of Medicine, 1927; specialist certified by the American Board of Otolaryngology; interned at the U. S. Naval Hospital, League Island, Philadelphia; began active duty as a lieutenant (jg) in the medical corps of the U. S. Naval Reserve, on July 6, 1926; promoted to lieutenant, lieutenant commander and captain; surgeon on Vice Admiral Marc A. Mitscher's carrier flagship, losing his life in the Pacific area when the vessel was hit by Jap suicide planes May 11, aged 43.

Emmett Wood Mead, Castlewood, Va.; Medical College of Virginia, Richmond, 1892; member of the American Medical Association; died July 27, aged 83, of senility.

Charles H. Montgomery ✠ New York; McGill University Faculty of Medicine, Montreal, Que., Canada, 1903; served as chief of staff of the Manhattan Eye, Ear and Throat Hospital and on the staffs of the Bellevue, Harlem and Montefiore hospitals; died July 13, aged 64, of coronary occlusion.

Clifford J. Morris, Dawson Springs, Ky.; Vanderbilt University School of Medicine, Nashville, 1912; at one time assistant superintendent of Western State Hospital in Hopkinsville; chief physician at the state penitentiary at Eddyville; died July 25, aged 60, of heart disease.

Reid Rufus Morrison, Statesville, N. C.; North Carolina Medical College, 1906; served overseas during World War I; assistant physician in the county health department; died in the H. F. Long Hospital July 21, aged 62.

Wallace Welsh Munsie ✠ Decatur, Ill.; Hahnemann Medical College and Hospital of Philadelphia, 1940; interned at the Huron Road Hospital in East Cleveland; on the staffs of the Decatur and Macon County Hospital and St. Mary's Hospital; died July 25, aged 32, of endocarditis.

Logan Skidmore Owen, Hoboken, N. J.; University of Georgia Medical Department, Augusta, 1924; member of the American Medical Association; interned at the Bellevue and Knickerbocker hospitals in New York; on the staff of St. Mary's Hospital; affiliated with the Hoboken plant of the Bethlehem Steel Corporation; died in New York Hospital July 15, aged 47, of heart disease.

Frederick Eugene Porter ✠ Medical Director, Captain, U. S. Navy, retired, Alhambra, Calif.; Vanderbilt University School of Medicine, Nashville, Tenn., 1901; entered the U. S. Navy on Oct. 10, 1904; retired Sept. 1, 1939 on or after attaining statutory retirement age; fellow of the American College of Surgeons; died Nov. 28, 1943, aged 68, of coronary embolism and chronic interstitial nephritis.

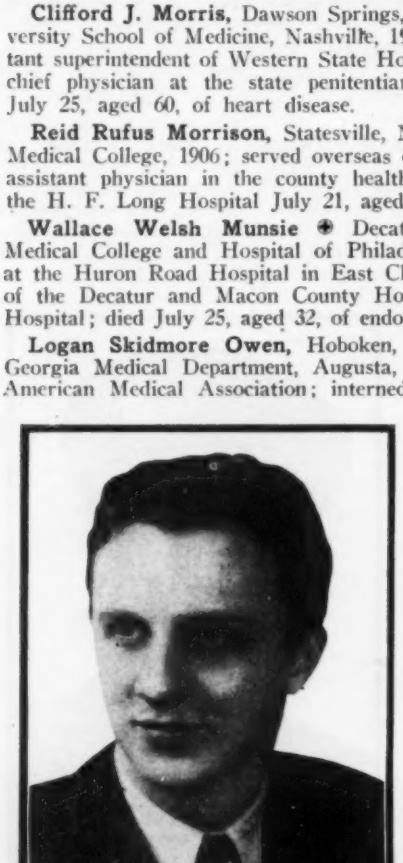
Samuel Jackson Price, Queenstown, Md.; University of Maryland School of Medicine, Baltimore, 1909; member of the American Medical Association; president of the Queen Annes County Medical Society; served during World War I; deputy medical examiner, Queen Annes County; on the associate staff of the Memorial Hospital in Easton, where he died July 25, aged 58, of chronic emphysema and endocarditis.

Carson R. Reed, Natchitoches, La.; Atlanta College of Physicians and Surgeons, 1906; member of the American Medical Association; died in a sanatorium in Shreveport August 4, aged 66.

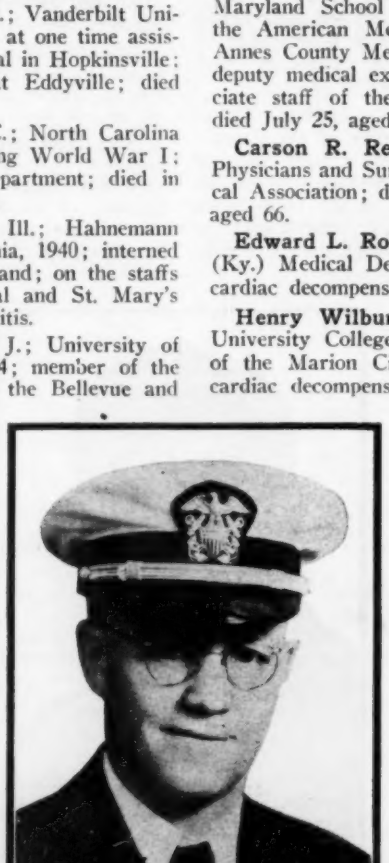
Edward L. Rolph, Kimball, Neb.; University of Louisville (Ky.) Medical Department, 1892; died August 3, aged 85, of cardiac decompensation.

Henry Wilbur Sager, Marion, Ohio; National Normal University College of Medicine, Lebanon, 1892; on the staff of the Marion City Hospital; died August 27, aged 80, of cardiac decompensation.

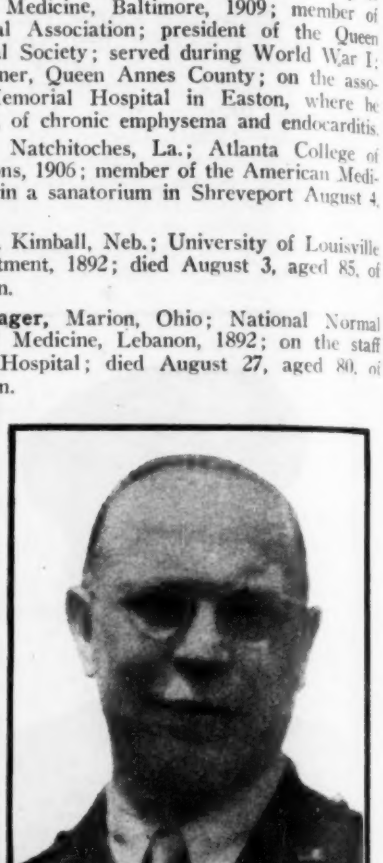
Robert Sommer, Richmond, Maine; Medizinische Fakultät der Universität Wien, Vienna, Austria, 1920; served as resident on the staff of the Mercy Hospital in Hamilton, Ohio; died July 30, aged 50, of coronary thrombosis.



Capt. Charles Franklin Sampsel
M. C., A. U. S., 1910-1945



Lieut. Comdr. Lowell G. Kramar
(MC), U.S.N.R., 1900-1945



Lieut. Gilbert H. Wolf
M. C., A. U. S., 1900-1942

KILLED IN ACTION

Charles Franklin Sampsel ✠ Bristol, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1936; interned at the Philadelphia General Hospital in Philadelphia; began active duty as a first lieutenant in the medical corps, Army of the United States, on Aug. 11, 1942; later promoted to captain; killed in action in Okinawa April 6, aged 34.

Lowell Graft Kramar ✠ Fortuna, Calif.; Stanford University School of Medicine, San Francisco, 1928; interned at the San Francisco Hospital; served as assistant resident at St. Luke's Hospital in San Francisco; past president of the Humboldt County Medical Society and the Humboldt County Tuberculosis Society; member of the local chamber of commerce and the Rotary Club; began active duty as lieutenant commander in the medical corps of the U. S. Naval Reserve on Nov. 30, 1942; died in the Asiatic area June 21, aged 45, of extreme multiple injuries.

Gilbert Heinsfurter Wolf, New York; Baylor University College of Medicine, Dallas, 1935; member of the American Medical Association and the American Academy of Dermatology and Syphilology; served an internship at St. Mary's Hospital in East St. Louis, Ill., and the Grady Hospital in Atlanta; began active duty as a first lieutenant in the medical corps, Army of the United States, on May 5, 1942; died in enemy action Oct. 9, 1942, aged 42, while aboard ship en route to Iraq.

Correspondence

"EMERGENCIES IN THE ALLERGIST'S PRACTICE"

To the Editor:—Dr. Waldbott's article entitled "Emergencies in the Allergist's Practice" (THE JOURNAL, August 25) will impress practitioners with the value of a working knowledge of allergy. Many doctors perform skin tests without realizing the danger of serious and even fatal consequences of intracutaneous testing. Literal interpretations of skin test findings without clinical survey further deprive patients of foods or materials they should have. Much harm is done by prescribing diets based on allergy tests alone.

On page 1206, paragraph 5, Dr. Waldbott states that "scratch testing material loses its potency relatively soon," which would indicate that intracutaneous extracts are more stable, yet actually the reverse holds true. Glycerinated extracts and powders remain stable for a much longer period than the intracutaneous allergens and furthermore are much safer to use. In addition, the intracutaneous method produces many more false positives, as a result of which persons are separated, as already mentioned, from foods which they may strongly require and for which the all too frequently used vitamins are substituted, with unsatisfactory results.

I disagree on a point which appears firmly entrenched in the literature, namely that the size of the skin test reaction is the guide to the degree of sensitivity and from which schedules of treatments and classifications are made. I regularly see patients with 4 plus skin reaction who can take very high doses, and 1 plus responses in patients able to tolerate only a weak schedule and therefore do not regard the size of a skin test as the key to clinical sensitivity. Only after a few of the early injections, small well diluted doses, slowly raised, with accurate observations of local, focal or constitutional responses can the clinical sensitivity be determined. Severe, repeated constitutional reactions may occur when this method of determining sensitivity is not used. In 1936 I stressed the point "fit the dose to the patient, not the patient to a schedule," and the latter cannot be positively determined by the initial skin test (Engelsher, D. L.: Allergy in Practice, *Ohio State M. J.* **32**:1229 [Dec.] 1936).

The lower part of the arm and the forearm are the safest sites for testing, certainly not the back. In case of immediate constitutional reaction, a tourniquet can be easily applied to prevent further absorption, whereas this is impossible on the back and very uncomfortable on the thigh.

When the emergency is that grave and intravenous epinephrine may be indicated, it is safer in my opinion to use a prepared 1:10,000 solution rather than, as Dr. Waldbott states, mixing a 1:1,000 solution with blood, in the syringe, while the needle is in the vein (page 1207, column 1). Neither can an accurate dilution be made, nor is the time propitious for expending even a few seconds in the procedure.

The method of pollen desensitization quoted of W. W. Duke (New Method of Administering Pollen Extract for Purposes of Preventing Reactions, THE JOURNAL, March 15, 1930, p. 767) of adding epinephrine to each injection plus the use of a blood pressure cuff acting as a tourniquet is not logical and is not used by any allergist, to my knowledge, because of the evanescent action of the epinephrine, which could not prevent the later reactions.

Switching from depleted or old extracts to fresh ones accounts for many severe reactions, in spite of following the numerous published (Coca, Walzer and Thommen: Asthma and Hay Fever in Theory and Practice, Springfield, Ill., Charles C Thomas, 1931, p. 348) methods of the proportionate mixing of each. I regard this as an erroneous method, because accuracy of the mixed strength of the solution is lacking. My routine is never to have an empty bottle. The upper and lower margins of my labels on the bottles are the guides. When the fluid reaches the lower margin, fresh extract is added to no higher a level than the upper margin of the label. By this precaution an equalizing pool is maintained through the various extract strengths. Clear labeling and care in using the correct extract and strength are simple facts occasionally overlooked in haste, which will prevent serious reactions.

On page 1208, column 5, Dr. Waldbott aptly mentions deaths from intravenous aminophylline and quotes G. A. Merrill (Aminophylline Death, THE JOURNAL, Dec. 25, 1943, p. 1115). Intramuscular use of this drug will alleviate many an attack, without the dangers of the intravenous route, which latter is used much too frequently and unnecessarily.

From the number of serious consequences which we see, from the use of acetylsalicylic acid and morphine for persons sensitive to these drugs, I feel that many practitioners doubt that such allergies exist. To suspend the cough reflex with morphine not infrequently has a fatal outcome. Thorough questioning on drug sensitivity should form a part of all histories, medical, surgical or specialties, and a prominent designation (I encircle positives in red) used. The surgeon should not hesitate to have an allergic consultation, if the slightest doubt exists, for type of anesthesia, drug and diet recommendations. An aspirin tablet given postoperatively for a "cold" can flare-up an asthma in an aspirin-sensitive patient so severe that a fatality may result. Contrary to Dr. Waldbott's statement (page 1208, column 1, paragraph 4) epinephrine sensitivity does exist to a varying degree. A patient at Fordham Hospital would become transiently disorientated after 2 minims of 1:1,000 epinephrine solution was injected. Many patients develop tachycardia, trembling and paleness from small doses.

Dr. Waldbott omitted two important points in his instructive paper: severe sulfonamide reactions and proper precautions in administration of serum. Sensitivity to sulfonamides may produce extensive angioneurotic edema with occasional edema of the glottis. Deaths from serum injections are well known to the profession. The seven ways to prevent serum reactions were published in THE JOURNAL (Engelsher, D. L.: Serum Administration and Allergy, THE JOURNAL, May 20, 1944, p. 238) after my earlier suggestions in 1936 and 1942.

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[To Dr. Engelsher's communication Dr. Waldbott replies:]

To the Editor:—The comment by Dr. Engelsher reemphasizes a number of points brought out in my paper. Concerning those on which there is some divergence of opinion, I wish to suggest the following:

1. Glycerinated extracts, which are usually employed for intracutaneous testing, are definitely more stable than the powdered ones, which are most widely in use for scratch testing. False positive reactions occur in both methods of testing. They can easily be recognized after the extract in question has been used a few times.

2. If intracutaneous tests are used (not scratch tests!) the injection of graduated doses of a certain antigen, either directly or by passive transfer, has been by far the most satisfactory method to me of gaging the patient's sensitivity (Waldbott, G. L.: Hay Fever Treatment During the Season, *Tri-State M. J.* **15**:2949 [May] 1943).

3. The intravenous method of administering aminophylline is decidedly more effective and prompt in its action than the intramuscular one and therefore far too valuable to be discarded. It is safe if the precautions which are outlined in my paper are followed.

4. Transient disorientation, tachycardia, trembling and pallor are not indications of sensitivity (meaning allergy!) to epinephrine. It cannot be questioned, however, that there is an individual degree of response to pharmacologic action of the drug.

5. Anaphylactic shock from serum as well as from drugs exhibits the same symptomatology and requires the same treatment and prophylaxis as that from pollen injections (Waldbott, G. L.: Prevention of Anaphylactic Shock, with a Study of 9 Fatal Cases, THE JOURNAL, Feb. 6, 1932, p. 446; Allergic Shock from Substances Other Than Pollen and Serum, *Ann. Int. Med.* **7**:1308 [April] 1934). I therefore did not elaborate on it further.

GEORGE L. WALDBOTT, M.D., Detroit.

THE USE OF TOURNIQUETS

To the Editor:—The paper by Speigel and Lewin in THE JOURNAL, October 6, contributes valuable information on the neglected subject of tourniquets, which admittedly was not fully settled by my research because of obstacles encountered. The following remarks may assist toward clarifying some points:

1. The described nerve lesions were evidently not due to asphyxia within the time (one and one-half hours) mentioned by the authors but were evidently due to direct pressure. The location of neuromas and other details indicate that the tourniquet application was of the old-fashioned kind, namely a rather broad tube of poor elasticity wrapped two or more times around the limb in separate turns. This method combines the evils of narrow and of broad tourniquets. My use of a narrow, highly elastic tube in two superimposed turns is not customary and has never been proved to cause permanent paralysis or contracture.

2. The narrow tourniquet is apt to crush nerves against bone in exposed locations, in the arm and to a less extent in the lower part of the leg. Precautions may consist in choosing the safest place for a tourniquet and placing small pads to guard endangered nerves. Granting that a broad tourniquet is more sparing of nerves within certain time limits, animal experiments show that if the time is long enough for damage to be caused by the broad band it is more severe and lasting than with the narrow band. For a valid therapeutic reason, I once placed a narrow tourniquet for seven hours below the knee of a man in Dr. Crossman's service; the inevitable paralysis was almost gone within three months, but with a broad tourniquet it would probably have been permanent. Crushing by a narrow tourniquet is like surgical section of a nerve followed by immediate suture. By an interesting coincidence, in that same issue of THE JOURNAL (p. 484) there is a recommendation of crushing the phrenic nerve with a mosquito hemostat as a recognized means of establishing temporary paralysis. Extended crushing, as by a broad tourniquet, would cause necrosis and fibrosis over such a length as to block regeneration permanently.

3. Refrigeration is the most powerful means of preventing or reducing damage from any kind of pressure and also from asphyxia. Examples: no paralysis or thrombosis in the many amputations under refrigeration anesthesia; only temporary paralysis of animals' legs after fifty-four hours of refrigeration with a narrow tourniquet. There seems to be no excuse for operating on a limb with a tourniquet without refrigeration. Cases such as those cited by Speigel and Lewin enlarge the list of disabilities and deaths resulting from the lack of official a'option of this method, which I began to publish in 1937. Balanced against the advantages of the broad tourniquet or padding with a towel, and against the greater advantages of pneumatic pressure, is the pronounced insulation thus introduced. The protection of a wide zone of tissue from cold is a difficulty which has not been solved and which stands as the strongest argument against broad tourniquets.

FREDERICK M. ALLEN, M.D., New York.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

EXAMINING BOARDS IN SPECIALTIES

Examinations of the Examining Boards in Specialties were published in THE JOURNAL, Nov. 24, page 906.

BOARDS OF MEDICAL EXAMINERS

ALABAMA: Mar. 19-21. Sec. Dr. B. F. Austin, 519 Dexter Ave., Montgomery 4.

COLORADO:* Denver, Jan. 1-5. Final date for filing application is Dec. 17. Sec., Dr. J. B. Davis, 831 Republic Bldg., Denver.

DELAWARE: *Examination.* Dover, Dec. 12. *Endorsement.* Dover, Dec. 19. Sec., Medical Council of Delaware, Dr. J. S. McDaniel, 229 S. State St., Dover.

IDAHO: Boise, Jan. 15. Dir., Bureau of Occupational Licenses, Miss Agnes Barnhart, 355 State Capitol Bldg., Boise.

KANSAS: Topeka, Dec. 6. Sec., Board of Medical Registration and Examination, Dr. J. F. Hassig, 905 N. Seventh St., Kansas City 10.

KENTUCKY: Louisville, March 25-27. Sec., State Board of Health, Dr. Philip E. Blackerby, 620 S. Third St., Louisville 2.

MAINE: Jan. 23-25. Sec., Board of Registration of Medicine, Dr. A. P. Leighton, 192 State St., Portland.

MARYLAND: *Medical.* Baltimore, Dec. 11-15. Sec., Dr. J. T. O'Mara, 1215 Cathedral St., Baltimore. *Homeopathic.* Baltimore, Dec. 11-12. Sec., Dr. J. A. Evans, 612 W. 40th St., Baltimore.

NEW JERSEY: Trenton, June 18-19. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

NEW MEXICO:* Santa Fe, April 8-9. Sec., Dr. LeGrand Ward, 141 Palace Ave., Santa Fe.

NEW YORK: Jan. 28-31. Sec., Dr. Jacob L. Lochner, Education Bldg., Albany.

NORTH CAROLINA:* Raleigh, Dec. 29. Final date for filing application is Dec. 19. Sec., Dr. Ivan Procter, Raleigh.

NORTH DAKOTA: Grand Forks, Jan. 1. Sec., Dr. G. M. Williamson, 4½ S. Third St., Grand Forks.

OHIO: *Endorsement.* Columbus, Jan. 8. *Examination.* Columbus, March 19-22. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

OKLAHOMA:* Oklahoma City, March 23. Sec., Dr. J. D. Osborn Jr., Frederick.

OREGON:* Jan. 23-26. Exec. Sec., Miss L. M. Conlee, 608 Failing Bldg., Portland 4.

PENNSYLVANIA: Harrisburg, January. Act. Sec., Bureau of Professional Licensing, Department of Public Instruction, Mrs. M. G. Steiner, 351 Education Bldg., Harrisburg.

RHODE ISLAND:* Providence, Jan. 3-4. Chief, Division of Examiners, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

SOUTH DAKOTA:* Pierre, Jan. 15-16. Sec., Medical Licensure, State Board of Health, Dr. Gilbert Cottam, Capitol Bldg., Pierre.

TEXAS: Austin, March 27-29. Sec., Dr. T. J. Crowe, 918-20 Texas Bank Bldg., Dallas 2.

VERMONT: Burlington, March or April 1946. Sec., Dr. F. J. Lawliss, Richford.

WASHINGTON:* Seattle, Jan. 14-16. Dir., Department of Licenses, Mr. Harry C. Huse, Olympia.

WEST VIRGINIA: Charleston, Jan. 7-9. Commissioner, Public Health Council, Dr. John E. Offner, State Capitol, Charleston 5.

WISCONSIN:* Madison, Jan. 8-10. Sec., Dr. C. A. Dawson, Tremont Bldg., River Falls.

WYOMING: Cheyenne, Feb. 4. Sec., Dr. G. M. Anderson, Capitol Bldg., Cheyenne.

* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

IOWA: Des Moines, Jan. 8. Dir., Division of Licensure & Registration, Mr. H. W. Grefe, Capitol Bldg., Des Moines.

MICHIGAN: Ann Arbor and Detroit, Jan. 11-12. Sec., Miss Eloise LeBeau, 101 N. Walnut St., Lansing.

MINNESOTA: Minneapolis, Jan. 2-3. Sec., Dr. J. C. McKinley, 126 Millard Hall, University of Minnesota, Minneapolis 14.

NEBRASKA: Omaha, Jan. 8-9. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, 1009 State Capitol Bldg., Lincoln 9.

OKLAHOMA: Oklahoma City, Jan. 21. Sec., Dr. J. D. Osborn Jr., Frederick.

OREGON: Portland, March 2. Sec., Board of Higher Education, Mr. C. D. Byrne, University of Oregon, Eugene.

SOUTH DAKOTA: December. Sec., Dr. J. D. Alway, Aberdeen.

TENNESSEE: Memphis and Nashville, Dec. 17-18. Sec., Dr. O. W. Hyman, 874 Union Ave., Memphis.

WISCONSIN: Milwaukee, Dec. 1. Sec., Prof. Robert N. Bauer, 152 W. Wisconsin Ave., Milwaukee.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1935 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American J. Digestive Diseases, Fort Wayne, Ind.

12:255-280 (Aug.) 1945

Oral Therapy for Pruritus Ani. L. G. Bodkin.—p. 255
Neurofibroma: Gastroscopic Report. W. D. Paul and D. W. Shapman.—p. 258.
Diarrhea Problem. W. Z. Fradkin.—p. 261.
General Treatment of Diarrheal Diseases. W. Z. Fradkin.—p. 263.
Sulfanilamide-Experimental Production of Liver Damage: Its Effect on Gastric Acidity. M. H. Streicher.—p. 267.
Allergy as Factor in Surface Ulcers, Varicose Veins, Phlebitis and Thrombosis. J. A. Turnbull.—p. 272.

American Journal of Diseases of Children, Chicago

70:61-134 (Aug.) 1945

Arterial Embolism and Thrombosis in Infancy. R. E. Gross.—p. 61.
*Pathogenesis of Nephrotic Hyperlipemia. W. Heymann and E. C. Clark.—p. 74.
Diagnostic Classification of Patients with Mental Deficiency: Distribution of 1,330 Institutionalized Patients, with Review of Incidence of Convulsive Disorders and Noncerebral Developmental Anomalies. H. Yannet.—p. 83.
*Studies on Control of Acute Infections of Respiratory Tract: IV. Continuous Oral Administration of Sulfadiazine to Children Highly Susceptible to Infection. M. Siegel.—p. 89.
Studies on Streptococci ("Enterococci") of Lancefield Group D: I. Serologic and Biochemical Characteristics. G. E. Foley and S. M. Wheeler.—p. 93.
Celiac Syndrome: III. Dietary Therapy for Congenital Pancreatic Deficiency. Dorothy H. Andersen.—p. 100.

Nephrotic Hyperlipemia.—Heymann and Clark determine total lipid, total and free cholesterol and phospholipid concentrations in the blood serum of dogs, rabbits and rats which were subjected to bilateral and unilateral nephrectomy or to enteral and parenteral administration of mercury bichloride, uranium nitrate and potassium dichromate. For control purposes the effects of splenectomy, cholecystectomy, sham operations and many other procedures were investigated. The authors conclude that the kidneys of dogs, cats, rats and monkeys are part of a mechanism which influences blood lipid concentration. The hypothesis is advanced that the hyperlipemia found in cases of nephrosis is of renal origin.

Sulfadiazine in Infections of Respiratory Tract.—Siegel studied the clinical effects of continuous oral administration of sulfadiazine on the incidence and severity of acute infections of the respiratory tract in children. The drug was used between August 1942 and April 1944 for periods of four to fifteen consecutive weeks in doses ranging from 0.5 to 2 Gm. daily. The average level of free sulfadiazine in the blood was 3.5 mg. per hundred cubic centimeters with a maintenance dose of 1 Gm. a day, and 7.2 mg. per hundred cubic centimeters with 2 Gm. a day. It was not necessary to discontinue the drug in any case because of serious toxic reactions. The incidence of acute infections of the respiratory tract was almost the same for treated and for control children. The treated patients recovered somewhat more promptly than the controls and experienced fewer complicated illnesses and fluctuations in severity. While the prophylactic use of sulfonamide compounds is of recognized value in certain circumstances, their usefulness is limited by factors pertaining to the host and the infecting agent which are not predictable. If the sulfonamides are used when prevailing conditions are not suitable for successful chemoprophylaxis, there is little additional advantage over prompt therapeutic application.

American Journal of Ophthalmology, Cincinnati

28:943-1070 (Sept.) 1945

Concerning Similarity of Developing Retina and Brain Wall in Human Embryos. H. C. Haden.—p. 943.
Ocular Complications of Certain Tropical Diseases. M. J. Reeh.—p. 958.
Juvenile Disciform Degeneration of Macula: Report of 10 Cases; Pathologic Findings. H. Lucic.—p. 965.
Total Reconstruction of Upper Lid (Blepharopoiesis) W. L. Hughes.—p. 980.
Catmin Lenses. S. Kamellin.—p. 993.
Summary of Reexamination of Orthoptic Patients with Consideration of Permanence of Results. Jean S. Robinson.—p. 999.
*Penicillin Treatment of Trachoma: Preliminary Report. D. J. Darius.—p. 1007.

Penicillin in Trachoma.—Darius reports 12 cases of trachoma ranging from type I to the chronic type III treated at the United States Indian Service Hospitals with sodium salt of penicillin in a solution of 500 units to each cubic centimeter of water. Drops of this solution were instilled in the eye every three hours. Improvement was observed under the three hour schedule but more rapid results were obtained under a half hour schedule. Loss of photophobia and lacrimation was noticed in twenty-four to forty-eight hours. Improvement in vision was usually evident on the third day, as was paling and thinning of the hyperemic palpebral conjunctiva, with gradual flattening of follicles and granulation tissue. Beginning shrinking and retraction of vessels of the pannus was definite on the fifth to the seventh day, with accompanying slower clearing of the gray corneal pannus infiltrate. Rapid healing of complicating corneal erosions and ulcers was the most spectacular improvement. The effect is not superior or more rapid than that obtained with sulfanilamide therapy, but penicillin may offer a solution in the treatment of sulfanilamide resistant or sensitive cases.

American Journal of Physiology, Baltimore

144:175-330 (July) 1945. **Partial Index**

Progressive Paralysis in Dogs Cured with Synthetic Biotin. S. G. Smith, with technical assistance of T. E. Lasater.—p. 175.
Stimulating Effect of Acetylcholine on Mammalian Heart and Liberation of an Epinephrine-like Substance by Isolated Heart. F. Hoffmann, Elena J. Hoffman, S. Middleton and J. Talesnik.—p. 189.
Effect of Hemorrhage and Replacement on Apparent Volume of Plasma and Cells. H. Lawson and W. S. Rehm.—p. 199.
Efficacy of Gelatin Solutions and Other Cell Free Fluids in Reversing Effects of Nearly Complete Exsanguination. H. Lawson and W. S. Rehm.—p. 217.
Effect of Exercise on Erythrocyte Sedimentation Rate. W. A. Black and P. V. Karpovich.—p. 224.
Effect of Bed Rest on Blood Volume of Normal Young Men. H. L. Taylor, L. Erickson, A. Henschel and A. Keys.—p. 227.
Ability of Liver to Change Blood Glucose and Lactate Concentrations Following Severe Hemorrhage. Clarissa H. Beatty.—p. 233.
Nature of Renal Tubular Mechanism for Acidifying Urine. R. F. Pitts and R. S. Alexander, with technical assistance of Katharine Fagan.—p. 239.
Survival Times of Eviscerated Rats as Influenced by Continuous Intravenous Administration of Solution of Sodium Chloride. D. J. Ingle, Ruth Sheppard and Helen A. Winter.—p. 255.
Influence of Excitation of Muscle Pain Receptors on Reflexes of Decerebrate Cat. E. Gellhorn and M. B. Thompson.—p. 259.
Metabolic Factors in Oxygen Poisoning. I. Gersh and C. E. Wagner.—p. 270.
Effect of Electrical Stimulation on Neuromuscular Regeneration. H. M. Hines, Eleanor Melville and W. H. Wehrmacher.—p. 278.
Life Cycle of White Blood Cells: Rate of Disappearance of Leukocytes from Peripheral Blood of Leukopenic Cats. J. S. Lawrence, D. M. Ervin and R. M. Wetrich.—p. 284.

American Journal of Public Health, New York

35:891-986 (Sept.) 1945. **Partial Index**

Evaluation of Methods to Control Air Borne Infections. J. E. Perkins.—p. 891.
1,200 Local Public Health Departments for the United States. H. Everson and Martha Luginbuhl.—p. 898.
Scarlet Fever in Schoolrooms: Outbreaks Due to Serologically Typed Hemolytic Streptococci. A. D. Rubenstein and G. E. Foley.—p. 905.
Infant Mortality in Relation to Month of Birth. P. R. Eastman.—p. 913.
Nutrition and Oral Tissues. M. Massler.—p. 923.
Memphis and Shelby County Tuberculosis Control Program. L. M. Graves and F. H. Cole.—p. 934.
Physical Growth in Childhood and Military Fitness. A. Ciocco.—p. 927.
Biochemical Methods in Nutritional Surveys. O. A. Bessey and O. H. Lowry.—p. 941.

Am. J. Roentgenology & Rad. Therapy, Springfield, Ill.

54:109-216 (Aug.) 1945

Production of Growth by Action of Pituitary Gland on Vascular and Hemopoietic Systems: Interrelationship Between Lungs and Pituitary Gland. R. C. Moehlig.—p. 109.
Analysis of Physical Factors Controlling Diagnostic Quality of Roentgen Images: Part I. Introduction. R. H. Morgan.—p. 128.
*Ebstein Type of Tricuspid Insufficiency: Roentgen Studies in Case with Sudden Death at Age of 27. D. deF. Bauer.—p. 136.
Roentgenologic Manifestations of Amebiasis of Large Intestine. A. Druckmann and S. Schorr.—p. 145.
*Significance of Cannon's Point in Normal and Abnormal Functions of Colon. J. Arendt.—p. 149.
Skeletal Metastases in Cancer of Breast: Study of Character, Incidence and Response. J. Bouchard.—p. 156.
Treatment of Hemangiomas with Roentgen Rays. J. V. Prouty.—p. 172
Tumors in One of Homologous Twins: Hodgkin's Disease with Primary Skeletal Manifestations. H. Charache.—p. 179.

Tricuspid Insufficiency.—Congenital tricuspid insufficiency of the Ebstein type has been reported only 16 times. Bauer reports the seventeenth case, the fourth instance of sudden death. A woman aged 27, studied on three occasions over a period of nine years, was first seen at the age of 18, when she complained of weakness, easy fatigability and breathlessness in response to minor exertion. The most distressing symptom was "heart flutter." She was seen several times in the outpatient clinic before having an attack of acute gonococcic arthritis involving the right wrist, which occurred at the age of 20. Bouts of palpitation and dyspnea on exertion were then less troublesome because she had learned to accept her physical limitation and was leading a less active life. Teleroentgenograms and roentgenoscopy showed increase of the transverse diameter of the heart during this two year period. At the age of 27 the patient was admitted for study of her cardiac status and consideration of the advisability of oophorocystectomy. The electrocardiogram showed the same general picture as previously, with normal sinus rhythm and right bundle branch block. The roentgenogram demonstrated enlargement of the right atrium and ventricle. A papillary cystadenoma of the ovary was removed. The postoperative course was satisfactory and the patient was discharged on the twelfth day. She returned for dressings on the twenty-first and twenty-eighth postoperative days. She died suddenly during the last visit to the clinic. The attending physicians believed that death was caused by pulmonary embolism. Postmortem x-ray studies of the heart were compared with teleroentgenograms made during life. The roentgenologic evidences of tricuspid insufficiency were massive enlargement of the cardiac shadow to the right and left in the absence of pulmonary congestion, prominent upper mediastinal shadow with widened superior vena cava, enlargement of the right atrium and ventricle and difficulty in visualization of the small left ventricle.

Cannon's Point in Functions of Colon.—Arendt states that after a barium meal it may be noted that the first part of the transverse and the ascending colon up to a certain point is contracted, while the second part of the transverse colon and the descending colon are of normal diameter. In another group of cases the reverse process may be evident: the ascending colon and the first part of the transverse colon are wide, the second part of the transverse colon and the descending colon are contracted. The earliest observations concerning this phenomenon were made by Cannon, who in experiments on animals described in 1902 a ring of contraction in the large bowel of the cat, which divides the colon into two portions. This point, which is in the proximal mid-third of the transverse colon, is also found in man. It is of clinical and roentgenologic significance and should be called Cannon's point. Arendt's roentgenologic observations indicate that it is the pivoting point of the vagus-pelvicus and of the sympathetic innervation, thus dividing the colon into two distinct neurologic units as far as the extrinsic innervation is concerned. The innervation follows the blood supply. To be visible in roentgenograms, an antagonism between both neurologic units is necessary; if the nerve impulses in the two divisions are the same, no demarcation can be expected; if they are antagonistic, the division is clearly visible. Instead of the antagonism, we sometimes see in the case of overlapping impulses a contraction ring caused by intrinsic nerve impulses. The two units may be harmonious or antagonistic. Spastic contraction of the second unit is a frequent cause of constipation in the ascending colon and is best treated by antispasmodics. The proper knowledge of the neurologic units is important in differentiation and choice of the operative method of the different types of megacolon.

Annals of Allergy, Minneapolis

3:241-332 (July-Aug.) 1945

Effect of Glutamic Acid on Hydrogen Ion Concentration of (*pH*) of Urine in Petit Mal Types of Epilepsy: Daily Record for One Year of Urinary *pH* of Epileptic Patient with Allergic Background, to Whom Four Forms of Glutamic Acid Were Administered in Various Daily Amounts. R. H. Spangler.—p. 241.
Study of Bronchial Asthma in General Hospital, with Statistical Report of 200 Cases. J. A. Rudolph.—p. 258.
Carcinoma of Lung with Asthmatic Symptoms. M. W. Moore.—p. 271.
Allergy to Tobacco Smoke. D. M. Pipes.—p. 277.
Fall Graduate Instructional Course in Allergy. T. Hall.—p. 282.
Atmospheric Pollen Surveys in Brazil. J. B. Greco.—p. 283.
Experimental Approach to Oral Treatment of Food Allergy: III. Oral Deallergization with Food Propeptans of Orally Allergized Animals. E. Urbach, G. Jaggard and D. W. Crisman.—p. 287.
Sensitivity to Oral Administration of Castor Oil. P. Blank.—p. 297.

Archives of Internal Medicine, Chicago

76:63-130 (Aug.) 1945

*Powdered Stomach in Treatment of Fatty Liver and Other Manifestations of Infantile Pellagra: Its Significance with Reference to Problems of Edema and Steatorrhea in Infants and in Adults. T. Gillman and J. Gillman.—p. 63.
Cold Hemagglutination in Primary Atypical Pneumonia and Other Common Infections. C. L. Spingarn and J. P. Jones.—p. 75.
Amebic Pericarditis. F. Kern Jr.—p. 88.
Ulcerative Tracheobronchitis Following Atypical Pneumonia: Report of Cases. E. B. Kay.—p. 93.
*Epidemic Hepatitis With and Without Jaundice: Some Clinical Studies on 255 Patients Among Troops in Combat Zone. R. M. Finks and R. W. Blumberg.—p. 102.
Infectious Diseases: Eleventh Annual Review of Significant Publications. H. A. Reimann.—p. 114.

Powdered Stomach in Treatment of Infantile Pellagra.—The syndrome which the Gillmans accept provisionally as pellagra in infants is prevalent in Johannesburg, South Africa. Analysis of hospital records during the last four years has revealed that the death rate among children suffering from this disease fluctuates between 40 and 60 per cent. The views held concerning the causes of pellagra suggest that this disease is caused by a lack of vitamin B complex, especially of nicotinic acid. However, vitamins fail to be effective in approximately 50 per cent of the cases. The authors discovered that powdered hog stomach led to rapid improvement in the clinical condition and simultaneously depleted the fat from the liver. In a study of 23 cases of pellagra in infants and children they noted that the main clinical findings were a varying degree of edema, dermatitis, angular and labial stomatitis (cheilosis), graying of the hair with varying degrees of alopecia, steatorrhea and a large fatty liver. Microscopic examination of aspiration biopsy of the liver revealed the presence of fat in the liver cells. The fatty change in the liver was a constant feature and was not due to intercurrent infection. The accumulation of fat in the liver proved to be a more accurate measure for predicting the outcome than the clinical findings. All the patients in this series treated with vitamins died. Liver extract and especially powdered stomach depleted the fat from the liver, and this depletion was invariably associated with a dramatic improvement. Five days' treatment with 10 Gm. of powdered stomach a day was adequate to allow for a continued depletion of fat from the liver even after treatment was suspended. Although infantile pellagra is initiated by dietary imbalance, the secondary pathologic changes which supervene cannot be alleviated by a full diet and vitamin concentrates. The edema of infantile pellagra is not related to the serum proteins but probably results from a disturbance of the gastrohepatorenal mechanism. In view of the low fat content of the diet, the steatorrhea in infantile pellagra was regarded as resulting not from malabsorption of fat but from conversion of carbohydrate to fat which cannot be utilized. The evidence indicates that fat continuously present in the bowel liberates enterogastrone, which in turn inhibits gastric function. In view of the rapid improvement in pellagra treated with powdered stomach, it is recommended that this treatment be given universal trial for other diseases in which steatorrhea is a prominent feature.

Hepatitis With and Without Jaundice.—During the late summer and fall of 1943 an epidemic of infectious hepatitis began among American, British and French troops in the North African theater. A total of 448 patients with jaundice were admitted to the gastroenterologic service of a general hospital in Italy. Jaundice developed also in patients in the surgical wards; 196 patients with hepatitis and jaundice uncomplicated by other diseases, 42 patients having additional diseases simultaneously and 17 patients with hepatitis without jaundice were studied. Finks and Blumberg stress that the clinical characteristics of epidemic hepatitis with jaundice are not essentially different from those of catarrhal jaundice. Epidemic hepatitis is similar to postvaccinal hepatitis but differs in the frequent occurrence of chills, fever and lymphadenopathy and in the relative absence of dermatitis, anemia and mental reactions. Fever, chills and other evidence of an acute infectious, systemic disease are common initial symptoms. The disease is usually mild but has a tendency to relapse with exertion, fatigue and intercurrent infections. Relapses can be prevented or minimized by rest in bed and by a prolonged convalescent period. The disease, although usually benign, may be rapidly fatal. There was one fatality in this group. Repeated severe hemorrhages from ulcerations in the gastrointestinal tract and nephrosis due to deposition of bile pigment in the renal tubules were complications in the fatal case.

Canadian Medical Association Journal, Montreal

53:199-308 (Sept.) 1945

Principles of Penicillin Therapy. R. F. Farquharson.—p. 199.
Insulin and Diabetes: In Retrospect and in Prospect. C. H. Best. —p. 204.
*Genitofemoral Causalgia. E. K. Lyon.—p. 213.
Small Hospital Construction. F. H. Coppock.—p. 216.
Medical Treatment of Postoperative Pulmonary Atelectasis. M. Aronovitch.—p. 222.
Family with Inherited Ectodermal Dystrophy. W. D. Wilkey and G. H. Stevenson.—p. 226.
Psychotherapy for General Practitioner. S. R. Laycock.—p. 230.
*Treatment of Essential Hypertension with Sodium Thiocyanate. R. E. Beamish and J. D. Adamson.—p. 236.
Comments on Abdominal Wounds Treated in Canadian Field Surgical Unit. G. C. Johnston.—p. 242.
Syndrome of Ovarian Tumor Associated with Ascites and Pleural Effusion. S. R. Townsend.—p. 245.
Psychologic Factors in Skin Disease. F. Kalz.—p. 247.
Surgical Treatment of Prostatic Obstruction. R. M. Nesbit.—p. 254.
Osteogenic Sarcoma Developing on Paget's Disease. R. C. Burr. —p. 262.
Classification of Nontuberculous Chest Diseases, with Special Reference to So-Called Atypical Pneumonia. C. Rich.—p. 265.

Genitofemoral Causalgia.—Lyon adds 3 cases of genitofemoral causalgia to a series of 7 which were reported by McGee in 1942. Lyon's first patient was a farmer aged 18 who complained of severe pain in the right groin of four months' duration. The pain was aggravated by standing, walking, lifting and straining and disappeared when the patient lay down and flexed his right thigh on the abdomen. He had had an appendectomy four years previously. The old appendectomy scar was well healed, not tender or fixed. There was tenderness along the right inguinal canal, especially in the region of the internal ring. The tenderness in this region was so acute that the patient became faint when this area was palpated and stated that this was the exact spot where he felt the maximum amount of pain when walking and standing. A diagnosis of genitofemoral causalgia was made and operation advised. The cecum and terminal ileum were found to be bound down by dense adhesions to the posterior peritoneum over the iliac vessels. These adhesions were freed and the posterior peritoneum was opened. The genitofemoral nerve was identified and lifted up from the psoas muscle where it crossed beneath the ureter. It was followed down. The nerves seemed to be under an unusual tension. Approximately 2 inches of the main nerve trunk was excised and the cut ends were allowed to retract. The convalescence was uneventful and the patient has been free from pain and discomfort since the operation. In the two other cases the author was again impressed with the apparent tautness of the nerve at the region of its exit from the posterior peritoneum and its entrance to the internal inguinal ring and below Poupart's ligament. In none of the 3 patients were the adhesions particularly dense, but the nerves in all 3 were quite taut even with the patient lying in the supine position. This tension might be increased by hyperextension of the thigh during the act of walking or standing. Sectioning of this nerve is the best method of producing a cure of this most distressing condition.

Treatment of Essential Hypertension with Sodium Thiocyanate.—Beamish and Adamson used Barker's sodium thiocyanate method in the treatment of 10 patients with essential hypertension. Special precautions were taken to eliminate the psychic effects of treatment. Objective and subjective improvement definitely attributable to the action of thiocyanate was obtained in over half of the patients. Blood pressure reductions obtained in all cases averaged 40.5 mm. systolic and 19.8 diastolic. Symptomatic improvement occurred in 6 cases; mild toxic effects occurred in 5. Best results were secured in those with severe symptoms associated with little cardiovascular and renal damage. By proper selection of cases the number of good results could be increased. Dosage must be carefully controlled by blood cyanate determinations, and patients must be watched for toxic manifestations. Severe symptoms or dangerously high pressure, unrelieved by other treatment, indicate the use of thiocyanate.

Delaware State Medical Journal, Wilmington

17:149-168 (Aug) 1945

Rural Health and Its Future. E. Cameron.—p. 149.
School Hygiene in the School; One Method of Presentation. B. Zuger. —p. 150.
V-J Day and Some Local Sanitation Along Delaware River. R. C. Beckett.—p. 152.
Incidence of Plural Births. C. A. Marshall.—p. 155.
Areas for Rapid Progress in Nutrition. Mary T. Davenport.—p. 156.
Why the Board of Health Is Concerned About Total Person. E. Usher. —p. 157.
Community Education for Health. Katharine B. Franklin.—p. 159.
Teaching Function of Public Health Nurse. Mary M. Klaes.—p. 162.

Journal of Aviation Medicine, St. Paul

16:209-284 (Aug.) 1945

Studies on Bends. H. L. Motley, H. I. Chinn and F. A. Odell.—p. 210.
Traumatic Calcifications: Precipitating Factors in "Bends" Pain. J. H. Allan.—p. 235.
Relationship Between Physical Fitness and Success in Training of U. S. Naval Flight Students. A. Graybiel and H. West.—p. 242.
Effect of Methylene Blue on Performance Efficiency at High Altitudes. Matilda Moldenhauer Brooks.—p. 250.
Physical Fitness. G. R. Harris.—p. 263.
Combined Mixing and Flow Regulator. M. Eckman and A. L. Barach.—p. 265.
Inhibition of Animal Metabolism Under Decompression. S. F. Cook. —p. 268.
Flatulence at Altitude in Presence of Cardiospasm: Report of Case. C. B. Taylor and F. J. Robinson.—p. 272.
Arterial Spasm and Transient Paralysis Resulting from Lightning Striking an Airplane. J. H. Currens.—p. 275.
Doctor of Air. F. A. Walbank.—p. 278.

Journal of Immunology, Baltimore

51:65-126 (Aug.) 1945

Relation of Antibody Response in Swine to Dose of Swine Influenza Virus Inactivated with Formalin and with Ultraviolet Light. I. W. McLean Jr., Dorothy Beard, A. R. Taylor, D. G. Sharp and J. W. Beard.—p. 65.
Studies of Subgroups of Blood Groups A and AB: I. Active and Passive Acquisition of Alpha$_1$ Agglutinins by A_2 Patients as Result of Blood Transfusion. L. E. Young.—p. 101.
*Id.: II. Agglutinogen A_3: Its Detection with Potent B Serum and Investigation of Its Inheritance. L. E. Young and E. Witebsky, with technical assistance of J. Mohn.—p. 111.
Studies on Purification of Syphilis Antigen. E. Fischer, R. Fischer-Dallmann and R. Bone.—p. 117.

Detection of Agglutinogen A_3.—Young and Witebsky say that although the subgroups A_3 and A_3B are rare they may be encountered from time to time in the operation of a blood transfusion service and in the investigation of paternity. They discovered a man with the blood group A_3B in the course of determining the blood groups of medical students. Of all red cells available, A_3B cells give the weakest reactions with B serum and therefore provide the most sensitive testing mediums for this serum. Serum from group B donors vaccinated intravenously with a solution of A and B factors may produce strong agglutination of A_3B cells. Titrations of such a serum serve to emphasize the great advantage of using "immunized"

persons as donors of blood grouping serum. Studies of the subgroups of other members of the family of the A_2B individual revealed that the student's father and both grandmothers belonged to group B, while his mother and all 3 of her siblings belonged to subgroup A_2B and his sister to subgroup A_2. It is most likely that the A_2B student inherited the A_3 agglutinogen from the mother, whose genotype is presumably A_2B. These findings might constitute an exception to the currently accepted theory of inheritance of the A_3 agglutinogen.

Journal of Experimental Medicine, New York

82:157-226 (Sept.) 1945

Plasma Protein Metabolism-Electrophoretic Studies: Chronic Depletion of Circulating Proteins During Low Protein Feeding. L. J. Zeldis, E. L. Alling, A. B. McCoord and J. P. Kulka.—p. 157.

Plasma Protein Production as Influenced by Parenteral Protein Digests, Very High Protein Feeding and Red Blood Cell Catabolism. S. C. Madden, A. A. Kattus Jr., J. R. Carter, L. L. Miller and G. H. Whipple.—p. 181.

Effect of Enzyme Inhibitors and Activators on Multiplication of Typhus Rickettsiae: II. Temperature, Potassium Cyanide, and Toluidin Blue. D. Greiff and H. Pinkerton.—p. 193.

Immunochemical Studies on Blood Groups: I. Estimation of A and B Isoantibodies in Human Serum by Quantitative Precipitin Method. E. A. Kabat and Ada E. Bezer.—p. 207.

Journal of Lab. and Clinical Medicine, St. Louis

30:725-808 (Sept.) 1945

Penicillin Sensitivity of Strains of Six Common Pathogens and of Hemophilus Hemolyticus. M. Meads, E. M. Ory, Clare Wilcox and M. Finland.—p. 725.

*Superiority of Continuous Intravenous Drip for Maintenance of Effectual Serum Levels of Penicillin: Comparative Studies, with Particular Reference to Fractional and Continuous Intramuscular Administration. L. Loewe, P. Rosenblatt, M. Russell and Erna Alture-Werber.—p. 730.

Activity of Penicillin at Temperatures Above 37 C. R. E. Hoyt, O. B. Pratt and M. G. Levine.—p. 736.

Oral Penicillin in Treatment of Gonorrhea. A. H. Free, L. F. Huffman, H. R. Trattner and Helen B. Brown.—p. 738.

Potentiation of Germicides with Aerosol OT. W. C. Tobie and Martha L. Orr.—p. 741.

Meningococcus Grouping: Note on Experience with Capsular Swelling Test. Edith A. Beckler.—p. 745.

Diagnostic Significance of Inclusion Bodies in Rabies and Canine Distemper. H. Rifkin, E. B. Cekada, M. Zarrow, D. G. Henderson and J. O. Whitehead.—p. 748.

Ocular Disturbances in Riboflavin Deficiency. T. D. Spies, D. J. Perry, R. C. Cogswell and W. B. Frommeyer.—p. 751.

Effect of Barium Chloride on Heart. A. M. Wedd and H. A. Blair.—p. 765.

Use of Theophylline Aminoisobutanol in Angina Pectoris. F. Steinberg and J. Jensen.—p. 769.

Diminution of Epinephrine Sensitivity of Normal Human Heart Through Thiouracil. W. Raab.—p. 774.

*Fatal Agranulocytosis Occurring During Treatment with Thiouracil P. H. Wosika and L. Braun.—p. 779.

Penicillin Sensitivity of Common Pathogens.—Meads and his associates describe tests on the in vitro sensitivity to commercial penicillin of 240 pathogenic strains of gonococcus, beta and alpha streptococcus, pneumococcus, meningococcus, and staphylococcus and also on 21 respiratory strains of Hemophilus hemolyticus. There were wide differences in sensitivity among these organisms and among different strains of the same organism. The strains of gonococcus and of group A hemolytic streptococcus were the most sensitive to penicillin and showed the greatest uniformity in that respect. The strains of staphylococcus and meningococcus showed the widest range of sensitivity. Most of the H. hemolyticus strains reacted like the majority of staphylococci and meningococci. The sensitivity of strains of pneumococcus and alpha streptococcus was intermediate between that of beta streptococci and meningococci. Resistant strains, which were 256 times more resistant than the reference strain of hemolytic streptococcus, were encountered only among the staphylococci. Relatively insensitive strains, which were from 16 to 64 times more resistant than the reference strain, were found among the staphylococci, meningococci, H. hemolyticus and alpha streptococci. Among the group A streptococci, pneumococci and meningococci there was no correlation between the serologic types and penicillin sensitivity. Among the pathogenic staphylococci there was no apparent relation between penicillin sensitivity and the hemolytic or coagulase properties of the different strains.

Continuous Intravenous Drip for Maintenance of Penicillin Levels.—Loewe and his associates determined penicillin serum levels following fractional intramuscular, continuous intramuscular and continuous intravenous administration of penicillin. They recommend fractional intramuscular therapy for the treatment of acute short lived infections. Injections should be given every two hours. The continuous intravenous drip of penicillin yields serum levels superior to those obtained following continuous intramuscular injection. Predictable serum penicillin levels are obtained following continuous intravenous drip in daily dosage schedules up to 10,000,000 units. Such doses are nontoxic.

Fatal Agranulocytosis from Thiouracil.—Wosika and Braun report a fatal case of agranulocytosis in a woman aged 50 who was given 0.6 Gm. of thiouracil for thirty-one days, 0.4 Gm. daily for fourteen days, 0.2 Gm. for twenty-one days and 0.1 Gm. for ten days, a total dose of 29.4 Gm. The basal metabolic rate was reduced, the pulse rate became slower and no change was noted in the blood count or in the weight. The exophthalmos and general condition improved dramatically. On November 13 her throat was slightly injected and her temperature was 99.6 F. Thiouracil was stopped. The throat condition became worse. On November 15 swelling, redness and a dirty white exudate were observed. The temperature was 103 F. She had become toxic and restless. The white blood cell count was 2,500. No neutrophils were found. The white blood cell count on successive days was 3,000, 1,200 and 500. The patient died on November 19 with a temperature of 106 F. after a deepening coma in spite of receiving daily 40 cc. of pentnucleotide intramuscularly, 6 cc. of yellow bone marrow, 500 mg. of ascorbic acid, 100 mg. of thiamine hydrochloride, a transfusion of 500 cc. of whole blood and 10 units of crude liver extract intramuscularly. She also received a few oral 2 cc. doses of folic acid and 15,000 units of penicillin every two hours for three days and continuous oxygen therapy. Nine cases (including the present report) of agranulocytosis from thiouracil have been reported in detail, in which there were five recoveries and four deaths. The danger of agranulocytosis is apparently increased in patients over 50 years of age. The duration of the treatment, the size of the daily dose and the total of drug consumed do not seem to be determining factors.

Journal of the Mount Sinai Hospital, New York

12:803-850 (July-Aug.) 1945

Aspects of Transmission of Nervous Impulse: I. Mediation in Peripheral and Central Nervous System. O. Loewi.—p. 803.

Cystadenoma of Pancreas: Case Successfully Treated by Surgical Extirpation. J. S. Beloff.—p. 817.

Pulmonopleural Fibrosis Secondary to Pulmonary Infarction: Operative Relief. M. S. Harte.—p. 821.

Penicillin Therapy in Case of Chronic Suppurative Bronchiectasis: Case Report. L. E. Siltzbach.—p. 825.

Essays on Biology of Disease: Chapter 9. Biology of Graves' Disease. E. Moschcowitz.—p. 828.

Life's Later Years: Studies in Medical History of Old Age. Part 8. Revival of Learning. F. D. Zeman.—p. 833.

Journal of Nutrition, Philadelphia

30:1-150 (Aug.) 1945

Goiter Studies with Rat. A. W. Halverson, J. H. Shaw and E. B. Hart.—p. 59.

Physiologic Availability of Vitamins: I. Human Bioassay Technic. D. Melnick, M. Hochberg and B. L. Oser.—p. 67.

Id.: II. Effect of Dietary Thiaminase in Fish Products. D. Melnick, M. Hochberg and B. L. Oser.—p. 81.

Comparative Merits of Fasting Specimens, Random Specimens and Oral Loading Tests in Field Nutritional Surveys. R. E. Johnson, C. Henderson, P. F. Robinson and F. C. Consolazio.—p. 89.

Effects of Food Intake and Anoxia on Ascorbic Acid Excretion, Acidity of Urine and Survival of Male Albino Rats. Katheryn E. Langwill, C. C. King and Grace MacLeod.—p. 99.

Studies on Prolonged Maintenance of Adult Dogs on Purified Diets. A. O. Seeler and R. H. Silber.—p. 111.

Availability of Soybean Oil Meal Phosphorus for Rat. R. R. Spitzer and P. H. Phillips.—p. 117.

Alcohol Metabolism as Related to Production of Thiamine Deficiency. W. W. Westerfeld and E. A. Doisy Jr.—p. 127.

Study of Hemoglobin Formation Following Administration of Certain Amino Acids to Rats Fed a Diet Low in Protein. Aline U. Orten and J. M. Orten.—p. 137.

Experimental Rickets in the Hamster. J. H. Jones.—p. 143.

Effect of Fat on Utilization of Galactose by Rat. L. P. Zialcita Jr. and H. H. Mitchell.—p. 147.

Medical Annals of District of Columbia, Washington

14:393-442 (Sept.) 1945

Story of Penicillin. A. Fleming.—p. 393.
Note on Infection and Cancer. L. P. Shippen.—p. 400.
Symptomatology of Infectious Mononucleosis. J. M. Moser Jr.—p. 403.
*Outpatient Penicillin Therapy of Gonorrhea. B. D. Chinn and F. G. Gillick.—p. 407.

Outpatient Penicillin Therapy of Gonorrhea.—The treatment schedule used by Chinn and Gillick consisted of four injections of penicillin of 50,000 units each at hourly intervals. They treated a total of 776 cases of gonorrhea without any toxic reactions. Two cultures forty-eight hours and ten days after treatment were obtained in 589 cases. Patients failing to return for observation were not considered in the evaluation of the method. Cultures were negative in 91.2 per cent of the patients receiving one course of treatment. Among the 52 patients who were considered treatment failures 19 were treated with a second course of 200,000 units. Seventeen of these responded successfully. Blood levels of from 0.19 to 0.25 unit per cubic centimeter of serum were maintained for at least three hours after treatment in 4 cases. The authors conclude that this method is satisfactory as an outpatient procedure in the treatment of gonorrhea.

Minnesota Medicine, St. Paul

28:609-688 (Aug.) 1945

Presidential Message to House of Delegates of Minnesota State Medical Association. E. L. Tuohy.—p. 629.
Colonna Reconstruction Operation for Ununited Fractures of Neck of Femur. M. S. Henderson and J. J. Hinchey.—p. 641.
Retropharyngeal Abscess and Massive Hemorrhage. J. J. Hochfilzer.—p. 644.
Punch Biopsy of Liver. R. F. Schmidt and A. H. Wells.—p. 647.

28:715-784 (Sept.) 1945

Conflicts and Psychogenic Maladjustments Incidental to Age. M. W. Kemp.—p. 715.
Psychosomatic Medicine, with Special Reference to Neurodermatoses. M. A. Troxell.—p. 718.
Surgical Repair of Inguinal Hernias. E. W. Minty and F. W. Minty.—p. 723.
Asthma and Formation of Hernia. L. E. Prickman and E. D. Bayard.—p. 727.
Chronic Peptic Ulcer of Esophagus. W. A. Coventry and A. H. Wells.—p. 729.

New England Journal of Medicine, Boston

233:315-338 (Sept. 13) 1945

*Effect of Chemotherapy on Duration of Carrier State Following Scarlet Fever. A. D. Rubenstein and G. E. Foley.—p. 315.
Hodgkin's Disease: Report of Case of Mediastinal Type with Leukopenia and Terminal Atelectasis. S. Levy.—p. 322.
Physiology. H. E. Hoff.—p. 325.
Acute Miliary Pulmonary Tuberculosis, Adenocarcinoma of Head of Pancreas; Tumor Thrombi in Lungs and Liver.—p. 328.
Acute Bacterial Endocarditis, with Mycotic Aneurysm of Aortic Valve and Rupture of Commissure Between Right and Left Posterior Cusps.—p. 332.

Chemotherapy for Scarlet Fever Carriers.—Rubenstein and Foley studied the effect of chemotherapy on temporary and convalescent scarlet fever carriers. In two epidemics the utilization of small daily doses of a sulfonamide preparation—sulfamerazine in the first instance and sulfadiazine (Pickrell's solution) in the other—apparently reduced to a minimum the number of persons carrying the causative organism. Studies among the families of children who acquired scarlet fever in a schoolroom outbreak revealed a spread of the causative organism to a large proportion of the family contacts, with the occurrence of several secondary cases. A study of a group of untreated scarlet fever patients showed that when discharged from isolation hospitals the majority carried the same type of streptococcus that was present on admission. A large proportion of scarlet fever patients treated with certain of the sulfonamides developed a temporary period of "cultural latency." In approximately half of these cases, however, the original streptococcus reappeared in the cultures after an interval of one to five weeks. A study of sulfathiazole treated cases suggests that the period of "cultural latency" has no effect on the incidence of late secondary cases.

Psychosomatic Medicine, Baltimore

7:257-320 (Sept.) 1945

Psychologic Factors in Combat Fatigue, with Special Reference to Hostility and Nightmares. L. J. Saul.—p. 257.
Hypnotic Ablation Technic for Study of Personality Development: Preliminary Report. H. Spiegel, J. Shor and S. Fishman.—p. 273.
Psychosomatic Regression in Therapeutic Epilepsy. T. D. Power.—p. 279.
Neuropsychiatric Aspects of Porphyria. N. Roth.—p. 291.
Study of Homosexual Adult Males. E. L. Sevringhaus and J. Chornyak.—p. 302.

Public Health Reports, Washington, D. C.

60:1005-1036 (Aug. 31) 1945

DDT Water Emulsion in Rice Fields as Method of Controlling Larvae of Anopheles Quadrimaculatus and Other Mosquitoes. F. L. Knowles and F. W. Fisk.—p. 1005.

60:1037-1068 (Sept. 7) 1945

Studies of Acute Diarrheal Diseases: X. C. Further Cultural Observations on Relative Efficacy of Sulfonamides in Shigella Infections. A. V. Hardy.—p. 1037.
Sickness Absenteeism Among Male and Female Industrial Workers During 1944, and Among Males During First Quarter of 1945, with Note on Absence Duration, 1941-1944. W. M. Gafafer.—p. 1043.
Isolation of Pasteurella Tularensis from Sputum: Report of Successful Isolations from 3 Cases Without Respiratory Symptoms. C. L. Larson.—p. 1049.

Tennessee State Medical Assn. Journal, Nashville

38:239-278 (Aug.) 1945

Benign Obstructive Lesions in Right Lower Quadrant. J. R. Branch.—p. 239.
Fractures About the Elbow in Children. H. B. Boyd and A. R. Altenberg.—p. 243.
Goiter: Its Diagnosis and Treatment. L. C. Sanders and S. F. Strain.—p. 252.
Toxemia of Pregnancy. L. E. Dyer.—p. 259.
Birth of a Twenty Pound Infant. J. J. Gwin.—p. 266.

38:279-314 (Sept.) 1945

Hodgkin's Disease: Special Reference to Survival. C. C. Smeltzer.—p. 281.
Rational Management of Benign Prostatic Obstruction. R. F. Mayer and T. D. Moore.—p. 287.
Diagnosis and Treatment of Rectosigmoid Malignancy. M. W. Holehan.—p. 295.

West Virginia Medical Journal, Charleston

41:229-248 (Sept.) 1945

*Silicosis—Its Prevention and Treatment. D. A. MacGregor.—p. 229.
Flocculation Test for Syphilis: Its Technic and Evaluation. W. L. Hardesty and Anita Hullman.—p. 237.
Acute Laryngotracheobronchitis in Children. Henrietta L. Marquis.—p. 240.

Silicosis.—The addition of as little as 1 per cent of aluminum dust to silica laden air is sufficient to prevent the development of silicosis in the experimental animal. It was not necessary to inhale both the silica and the aluminum simultaneously in order to protect the animal against experimental silicosis. When studying the application of this preventive measure to man it seemed necessary to have the miners breathe the aluminum dust in a relatively heavy concentration which could be measured and which would be approximately the same from day to day. The best time to give the treatment was when each shift of miners came into the change room to get ready for work. The miners are enthusiastic in their approval of this method of safeguarding their health. In using aluminum dust for treatment, the patients inhale aluminum laden air through a tube. The time of treatment is gradually increased from three minutes to twelve minutes, and treatments are given three times a week for a period of twenty weeks or more. The treatment of silicosis by the inhalation of fine aluminum dust results in a decrease of cough, shortness of breath, tightness in the chest and fatigue. In a group of 104 patients who had positive x-ray evidence of silicosis but who denied any disability there were 93 who claimed to be distinctly improved after treatment. MacGregor concludes that silicosis probably can be eradicated as an occupational hazard by means of adequate dust control and the use of aluminum dust as a preventive measure.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Journal of Pathology and Bacteriology, Edinburgh

57:157-284 (April) 1945

Isoimmunization to Blood Group Factors A, B, and Rh. K. E. Boorman, B. E. Dodd and P. L. Mollison.—p. 157.
Bone Formation in Apical Scars. J. Davson.—p. 171.
Antigenic Structure of Erysipelothrix. A. W. Gledhill.—p. 179.
Effect of Humidity on Survival of Dried Cultures of Streptococcus Agalactiae. P. S. Watts.—p. 191.
*Alloxan Diabetes in Rabbit. E. Duffy.—p. 199.
*Fatal Bronchial Asthma Showing Asthmatic Reaction in Ovarian Teratoma. J. G. Thomson.—p. 213.
Thrombosis of Aorta in Newborn: 3 Cases, 1 with Infarction of Liver. J. E. Morison.—p. 221.
Structure of Heart Valves, with Special Reference to Their Blood Supply and Genesis of Endocarditis. W. F. Harper.—p. 229.
Isolation of Antigenically Homogeneous Strains of Bact. Coli Neapolitanum from Summer Diarrhea of Infants. J. Bray.—p. 239.
Comparison of Modifications of Three Serologic Reactions for Syphilis: Wassermann, Meinicke and Sachs-Georgi Tests. D. B. Colquohoun, W. B. Kyles I. Rannie.—p. 249.

Alloxan Diabetes.—Duffy points out that a large intravenous dose of alloxan (200 mg. per kilogram of body weight) causes rapid death in rabbits, there being a phase of hypoglycemia followed by hyperglycemia and inanition if the animal survives for several days. At postmortem the chief change is damage to the cells of the islets of Langerhans. Survival beyond this acute toxic phase may be secured by appropriate treatment with dextrose by mouth during the first forty-eight hours, followed sometimes by insulin during the first two weeks. Animals which survive the acute toxic phase develop a condition similar to human diabetes, with hyperglycemia, glycosuria, polyuria, polyphagia and cataract. There is diminished tolerance of dextrose, but tolerance is increased by administration of insulin. Ketonuria, except at the early phase, is not a feature on ordinary diet but may be induced by administration of excess dextrose. In a proportion of cases spontaneous recovery occurs after several weeks or months, but animals have remained diabetic for as long as six to nine months. The only constant lesion in the diabetic rabbits is diminution in size of the pancreatic islets and reduction in number of beta cells, which also show enlargement, degranulation and sometimes vacuolation and hydropic change. The alpha cells are practically unaffected.

Asthmatic Reaction in Ovarian Teratoma.—Thomson reports the history of a woman, aged 47, who died in an attack of bronchial asthma. There were found in the teratomatous respiratory tissue of an ovarian teratoma "asthmatic" changes similar to those present in the bronchi.

Presse Medicale, Paris

53:241-252 (May 12) 1945

*Treatment of Large Isolated Cystoceles. J. Patel and C. Dubost.—p. 241.
Treatment of Malignant Forms of Bouillaud's Disease. R. Lutembacher.—p. 241.
Arrest of Attacks of Paroxysmal Tachycardia by Intravenous Injection of Acetylcholine. M. Segers, J. Lequime and H. Denolin.—p. 242.

Treatment of Large Cystoceles.—Patel and Dubost describe an abdominal cystohysteropexy which they performed in 7 cases. They say that this intervention represents a solution for the surgical treatment of large cystoceles. In this method the trigonal vaginal portion of the bladder is attached to the anterior surface of the uterus, and then the uterus is attached to the abdominal wall; thus uterus and bladder are raised at the same time. In 4 of the cases the uterine fixation was made according to the method of Doléris. In the other cases, which concerned women of advanced age, direct fixation of the uterine fundus was done. Posterior colpoperineorrhaphy was done in only 3 cases, but the authors think that it should always be performed. As regards danger to the ureter, it is easily avoided by either inserting ureteral catheters or by taking care that the inferior point of vesicouterine attachment does not take the whole width of the bladder.

Sang, Paris

16:213-292 (No. 4) 1944. **Partial Index**

Mechanism of Anemia in the Course of Splenic Anemia in Adults. Hemolytic Splenomegaly and Myelopenic Splenomegaly. P. Abrami, F. de Gaudart d'Allaines and J. Dugas.—p. 213.
Vitamin K and Globular Agglutination. W. de Weerdt.—p. 218.
Comparative Study of Gower's and Dognon's Methods for Determining the Amount of Hemoglobin. P. Chevallier, A. Fiehrer and F. Salzou.—p. 223.
Untoward Reactions of Blood Caused by Sulfonamides. Henriette Nouffiard.—p. 229.
Dognon's Method for Determining Amount of Hemoglobin in Blood. M. Guillot and H. Renault.—p. 243.
*Acute Eosinophilic Leukemia. Contribution to Study of Massive Eosinophilias of Blood. P. Ravault, M. Girard and L. Revol.—p. 258.
Hematologic and Clinical Considerations on the "Erythroblastic Disease in Adults." R. Crosnier and F. Morel.—p. 285.

Acute Eosinophilic Leukemia.—Ravault and his associates present a brief summary of 8 previously recorded cases of acute eosinophilic leukemia, adding the report of an additional case of a man aged 60. Acute eosinophilic leukemia is a rare disease occurring more frequently in men than in women. The clinical picture appears to be that of acute leukosis rather than of chronic leukemia. There may be rise of temperature, buccopharyngeal phenomena, osteoarticular pains, hemorrhages, and definite but moderate hypertrophy of the hemopoietic organs. Death may occur within several weeks or months. Examination of the blood may reveal a more or less considerable leukocytosis in which the eosinophils are the predominant cells; many of the cells may be immature.

Archivos Argentinos de Pediatría, Buenos Aires

14:331-378 (May) 1945. **Partial Index**

*BCG Antituberculosis Vaccination. A. Chattas and A. Degoy.—p. 356.
Friedreich's Disease in Four Brothers: Etiology, Symptomatology, Prognosis and Therapy. A. Gareiso and B. Vijnovsky.—p. 363.

Antituberculosis Vaccination.—Chattas and Degoy report the results of BCG vaccination given intradermally to 250 infants during the first week of life. The dose of the vaccine was 0.15 mg. for 115 infants and 0.30 mg. for 102 infants. BCG was given by mouth to 68 nonallergic infants and children between the ages of 5 months and 14 years. The infants and children in this group gave negative results to the tuberculin tests with 0.10 mg. of tuberculin. The substance was given in a dose of 0.20 Gm. in 10 cc. of the vehicle. The authors found (1) that BCG is harmless in the doses given, (2) that allergy appears sooner in infants and children who receive large doses of BCG than in those who are given the classic doses of the substance and (3) the percentage of infants and children who become allergic is higher for the former and lower for the latter.

Semana Medica, Buenos Aires

52:41-77 (July 12) 1945. **Partial Index**

*Spontaneous Cutaneous Emphysema in Course of Attacks of Asthma. E. G. Fongi and P. C. Rospide.—p. 46.

Spontaneous Subcutaneous Emphysema.—According to Fongi and Rospide, spontaneous subcutaneous emphysema in the course of attacks of asthma is rare. The authors report 2 cases at 22 and 26 years of age, respectively. Nausea, pain on deglutition, moderate cyanosis and subcutaneous emphysema of the supraclavicular zones and the neck appeared in the course of an attack. Crepitant rales were heard on auscultation of the precordial region. Roentgenograms of the chest and of the neck in 1 case showed air in the form of a clear band about the left ventricle and in the form of two bands on both sides of the trachea. On the basis of the reports in the literature and of their x-ray findings, the authors believe that spontaneous subcutaneous emphysema in the course of an asthmatic attack is due to rupture of pulmonary vesicles in the pulmonary interstitial tissue, with consequent increased pressure and escape of the air into the mediastinum and the cellular subcutaneous tissues of the neck. The prognosis is favorable. The therapy consists of analeptics, oxygen inhalation or subcutaneous continuous injection of oxygen. Incision of the emphysematous blebs is only rarely necessary.

Book Notices

Alcohol, Science and Society: Twenty-Nine Lectures with Discussions as Given at the Yale Summer School of Alcohol Studies. Cloth. Price, $5. Pp. 473. New Haven, Conn.: Quarterly Journal of Studies on Alcohol, 1945.

Here are included twenty-nine lectures with the discussion given at the Yale Summer School of Alcohol Studies during 1944. The subjects include considerations of metabolism and physiology of alcohol, the relation of alcohol to nutrition, the psychologic and psychiatric aspects of excessive drinking and inebriety, the relation of alcohol to pauperism and traffic, the medical treatment of the inebriate and similar topics. Altogether, the book provides about as complete a consideration of the subject as is anywhere available. The concluding chapter is a consideration of Alcoholics Anonymous, the most recent group movement for self control by inebriates.

Bone-Grafting in the Treatment of Fractures. By J. R. Armstrong, M.D., M.Ch., F.R.C.S., A/W/Comm. R. A. F. M. S. and Surgeon-in-Charge of an R. A. F. Orthopædic and Fracture Centre. Foreword by R. Watson-Jones, B.Sc., M.Ch.Orth., F.R.C.S. Fabrikoid. Price, $7. Pp. 175, with 204 illustrations. Baltimore: William Wood & Company, 1945.

This is a carefully prepared report on the experiences of the author in the management of 76 cases of bone grafting in the treatment of fractures. The general principles relating to the use of bone grafts are excellently set forth but there is perhaps too great an elaboration of operative details. More emphasis might have been given to a statistical analysis of the results in support of the author's conclusions. Fractures of the carpal navicular bone are particularly well dealt with, and the technic of closed pegging for graft fixation in case of delayed or nonunion is an ingenious procedure. Technical points that are open to argument are the necessity for both nail and intramedullary graft fixation for ununited fractures of the neck of the femur with survival of the head, extensive periosteal stripping for complete freshening up of the ends of an ununited fracture, the necessity for always fixing bone grafts with screws, and the author's tolerance for boiled grafts. The sections on preoperative and postoperative care are based on sound clinical thinking that characterizes the general sections. Emphasis on protection of the graft site, promotion of active rather than passive exercise and the avoidance of manipulation are welcome.

Common Ailments of Man. Edited by Morris Fishbein, M.D., Editor, Hygeia, the Health Magazine. Cloth. Price, $1. Pp. 177, with 6 illustrations. Garden City, N. Y. Garden City Publishing Co., Inc., 1945.

The education of the public in health matters has one primary motivation—the need for preventing self medication and the substitution therefor of accurate diagnosis and scientific therapy. There are, however, certain facts about diseases of which all persons should be aware to enable them to seek the proper medical care at the right time. People are too prone to ignore everyday afflictions—common ailments such as colds, headache and backache. Yet all of these conditions may be warnings of impending danger, of the presence of some serious disorder which, when diagnosed early, is amenable to treatment. In this book a number of these common disorders are discussed in a clear, simple and scientific manner. Each ailment is considered by a recognized specialist in his field; hence the information is authentic. The physician can recommend this book to his patients without hesitation as a source of the type of information on disease with which the public should be acquainted.

Forget Your Age! By Peter J. Steincrohn, M.D. Cloth. Price, $2.50. Pp. 238. Garden City: Doubleday, Doran and Company, Inc., 1945.

The advances made by modern medicine have lengthened life and diminished illness. Dr. Steincrohn has written previously essays and books enlightening the public on the progress of medicine, including "You Don't Have to Exercise," "Heart Disease Is Curable" and "More Years for the Asking." The present book is inspirational and should do much good in overcoming hypochondriasis in men and women who despair because the years creep upon them.

Men Under Stress. By Roy R. Grinker, Lt. Col., M. C., and John P. Spiegel, Major, M. C., Army Air Forces, United States. Cloth. Price, $5. Pp. 485. Philadelphia: Blakiston Company, 1945.

In 1943 the authors gave a report on the treatment of combat induced illnesses in the North African campaign. The work had been carried out at a hospital behind the lines on patients from ground and air forces and from British and American fighting units. The present book is based on studies of American Air Force patients at a unique hospital for their treatment in St. Petersburg, Fla. In essential conclusions there are no important differences between the two studies.

In several ways this book is an important contribution to the literature of the war. To flight surgeons and to psychiatrists of the Air Forces it will be an emotional stimulus, an intellectual guide and in some degree a handbook. To those who are responsible for military organization it is a challenge because its pages carry implications for every aspect of military psychiatry and military organization: e. g. for the processes of selection and classification, the correlation of psychology and psychiatry and the conservation of military manpower by reducing the incidence of emotional breakdowns both in training camp and in combat. In this connection light is shed on the problem of group loyalty as a source of strength and on how it can increase vulnerability. There are indications of the methods by which men can be motivated for combat. And finally there are important implications concerning the role which psychiatry must play in relation to command in determining personnel policies in future military organizations.

None of these implications are developed in detail and the reader is usually left to draw his own conclusions on these broad aspects of military policy. Because the authors were still in military service while the book was being written, no other procedure was possible for them. It is to be hoped, however, that now that they are civilians they will feel free to develop unsparingly and in detail every criticism of traditional military caste, organization and procedure which is implicit in their work. Such lessons must be drawn now; otherwise as war recedes into the past we shall forget these problems, and army organization will lapse into its traditional errors.

Yet the main focus of the book is not on such organizational problems as these but rather on the technics of therapy and on a theoretical formulation of vulnerability, of the process of falling ill and of the process of recovery. The material of the book is divided into five major sections: (1) the kind of men who go into military aviation, (2) psychologic stresses of combat, (3) the reactions to combat, (4) the delayed reactions after combat and (5) civilian applications of military psychiatry.

The reviewer finds himself always interested and challenged but not always convinced. The grounds of disagreement are technical, however, and need not be elaborated here, because they in no way impair the general usefulness of the book to the audience for which it was written. One would only warn the young flight surgeon or psychiatrist not to be too concerned if certain basic concepts are unclear and are sometimes used in contradictory senses. One suspects that the authors themselves are never quite satisfied with their own formulations because they make many attempts to restate in varying ways their theory of the dynamics of illness and cure. In view of the complexity of the theoretical aspects of the problem, one should feel only respect for this perplexity.

The procedure of narcosynthesis under pentothal is clearly described, but the theoretical rationale of the technic is not free from the confusions and contradictions mentioned. Nor can the reviewer agree with the authors that narcosynthesis differs fundamentally from the technics of "narcoanalysis" and "hypnoanalysis" as these were practiced by certain earlier investigators. There are important differences in emphasis but there are also many important similarities. Narcosynthesis is rather a more nearly mature evolution out of these earlier and sometimes naive beginnings. Although it is still in the experimental stage itself, one may safely predict that narcosynthesis will exercise a profound influence on the evolution of psychotherapeutic technics in the coming decade and that the work of these authors will always stand as a milestone in the evolution both of military psychiatry and of psychotherapy in general.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

VITAMINS AND NEOSTIGMINE FOR DEAFNESS

To the Editor:—Are any particular vitamins or combinations of vitamins recommended in the treatment of chronic catarrhal otitis media with deafness? Has neostigmine methylsulfate been proved of any value?

William P. Barron, M.D., New York.

ANSWER.—The query cannot be answered without a definite understanding as to what is meant by the phrase catarrhal otitis media with deafness. There are many able clinicians who are not inclined to make this diagnosis often, for in their experience the more severe types of chronic deafness turn out to be lesions of the inner ear or otosclerosis. Certainly no diagnosis of the nature of hearing loss should be made without one or more careful tests of hearing capacity. The diagnosis of chronic catarrhal otitis media should not be made in the presence of a normal or nearly normal membrana tympani; nor should, if this condition is diagnosed, a pronounced loss in the higher tone range be assigned to pathologic changes in the middle ear. There are many cases of "played out" middle ear disease of childhood with changes in the membrana tympani in which later deafness of the inner ear type develops. Lastly there is reason to believe that for a short time, at least following inflation of the middle ear, there should be some demonstrable hearing improvement in instances of true chronic otitis media of catarrhal nature. This could not be true in otosclerosis, and it is this condition which would offer a great deal of difficulty in a differential diagnosis. A diagnosis once assured, however, there is still a good deal of difference of opinion as to the value of either vitamins or neostigmine methylsulfate in the treatment of deafness due to catarrhal states.

There has been no particular evidence that the mild avitaminosis so widely postulated nowadays is the cause of severe ear difficulties, nor should the observations in human beings be equated with the results seen in animal experimentation, in which the avitaminosis produced is severe. It is nevertheless not wrong to prescribe vitamins in the treatment of a patient with chronic catarrhal otitis media associated with difficulty in hearing, if the physician has an open mind, makes no excessive promises and most of all is exceedingly precise in his examination of the middle ear and in testing and retesting the hearing. His diagnosis with regard to the location of the seat of the pathologic condition in the hearing apparatus will be accurate and he will in addition rule out causes in the middle ear for deafness which are at least partially self curative (i. e. secretory catarrhal states).

There is less to be said in favor of neostigmine methylsulfate as a therapeutic aid in deafness than there is for the vitamins. Its use is highly empirical and should be viewed with skepticism.

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Selfridge, Grant: Present Status of Vitamins in Relation to Eighth Nerve and Conduction Deafness, *Arch. Otolaryng.* **34**: 125 (July) 1941.

Babbitt, J. A.: The Problem of Impaired Hearing, Transactions of the College of Physicians of Philadelphia, Section on Otolaryngology, and Philadelphia Laryngological Society, *Arch. Otolaryng.* **38**: 94 (July) 1943; a discussion of the value of neostigmine in the treatment of impaired hearing.

HEMORRHAGIC PURPURA

To the Editor:—Would you please inform me whether there is any recent advancement in the treatment of purpura hemorrhagica in children?

V. W. Pryor, M.D., Holdenville, Okla.

ANSWER.—There is no recent advance in the general treatment of purpura hemorrhagica (primary thrombopenic purpura) that has given uniformly good results. For the control of local bleeding externally, thromboplastic substances have proved quite effective. As spontaneous recovery frequently occurs in children with hemorrhagic purpura, splenectomy should be reserved for chronic cases of over six to twelve months' duration.

EFFECTIVENESS OF PENICILLIN OF DIFFERENT MANUFACTURE

To the Editor:—A current comment in The Journal, July 7, 1945, states that the activity of penicillin varies with the method of manufacture. Could it be that the F substance is more active against hemolytic staphylococci? In March 1944, under the direction of the National Research Council, it was my privilege to treat a case of subacute bacterial endocarditis from which hemolytic staphylococci had been cultured. The treatment seems to have been a success. Just a year later I used about the same dosage of penicillin on a pelvic infection which produced abscesses despite the penicillin treatment; from these only hemolytic staphylococci could be cultured. Despite penicillin, suitable drainages, transfusions and so forth this patient finally died. The first patient was treated with penicillin from Commercial Solvents Corporation supplied through the National Research Council. The second patient was treated with various brands, mainly Upjohn's. Is there a difference?

L. A. Wheelwright, M.D., Grangeville, Ida.

ANSWER.—There is no evidence that the clinical results obtained from the use of penicillin vary with the method of its manufacture. The results and outcome of infection following penicillin treatment vary more often with the site of the infection, the sensitivity of the infecting strain of organism, the stage of the disease at which treatment is started and many other factors which are difficult to define. It is known that some strains of staphylococci have been encountered in which 20 to 25 units of penicillin per cubic centimeter has had no effect on their growth. These cases have frequently been fatal.

The chances are that the preparations used both in March 1944 and in March 1945 contained mostly penicillin G, and that neither preparation contained very much penicillin F. This is so because both manufacturers mentioned produce penicillin by the submerged culture method, which yields mostly penicillin G or penicillin II.

RECTAL TUBERCULOSIS

To the Editor:—A patient with rectal tuberculosis secondary to a healed pulmonary tuberculosis has been treated by surgery two or three times, but occasional abscess formation occurs. Ulceration is chronically present and cotton must be worn for a seropurulent discharge and occasional uncontrolled defecation. Pain is quite frequent. Is quartz light therapy by means of a local quartz electrode of any value? Is penicillin by any method of administration of value? What treatment apart from local treatment by a competent proctologist is advised? Could a general statement as to prognosis be given?

M.D, New York.

ANSWER.—The questions cannot be answered satisfactorily without more information regarding the character of the condition. For example, if the involvement is hyperplastic and limited to the rectum, if the lumen is reduced to such a degree that it cannot be enlarged and if the pulmonary condition will permit, it might be advisable to resect the rectum and establish a permanent colostomy. If ulcerative disease is predominant and there is no great thickening of the bowel wall or stricture formation, local therapy should be employed. Abscesses should be drained and sinuses should be uncovered. Hot irrigations of plain water or salt solution (110 F.) several times daily are helpful, especially for the relief of pain. Quartz light has no specific value but probably should be given a sufficient trial in conjunction with other therapeutic measures in case it may help in the particular case. Penicillin should be tried for the same purpose. The prognosis as to relief of the condition of the rectum and restoration of anything resembling normal function is not good. A continuance of some local disability is to be expected. The prognosis as to life depends chiefly on the pulmonary condition.

REMOVAL OF MOLES

To the Editor:—I have been told that magnesium carbonate will cause moles to drop off. If this drug is not effective please give me the name of any other drug used systemically to cause small moles around the neck to drop off.

M.D., South Carolina.

ANSWER.—Information is not available concerning any drug which, taken internally, will destroy ordinary cutaneous nevi. All effective methods are applied locally; these include surgery, physical agents such as the cautery, electrocoagulation, electrolysis, solidified carbon dioxide, x-rays and radium, and chemical agents, as trichloroacetic acid. The common nevi about the neck that occur so often in middle aged women, known commonly as tags, are most easily removed with the cautery or by electrocoagulation. A few nevi may be stirred to malignant activity by tampering with them. If one chooses to remove them, it must be done in a careful, thorough manner. If there is any doubt about the safety with which any particular nevus can be destroyed, it should be seen by an expert or left alone.